#19
1-10-01
RP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re **Chisari et al.**		
Serial No.:	08/854,825	
Filing Date:	May 12, 1997	
For:	**HEPATITIS C VIRUS-DERIVED PEPTIDES CAPABLE OF INDUCING CYTOTOXIC T LYMPHOCYTE RESPONSES**	**DECLARATION UNDER RULE 132 (to traverse a ground for rejection)**
Docket No.:	329368-101A	
Art Unit:	1648	
Examiner:	Parkin, J.S.	

Assistant Commissioner for Patents
Washington, DC 20231

I, Francis V. Chisari, M.D. an inventor of the above-referenced application ("the `875 application"), state as follows:

1. Information on my research credentials can be found in the attached *Curriculum vitae* (Exhibit A). My scientific peers have recognized my research on molecular virology and immunology by awarding me the Ernst Jung-Preis für Medizin in 1997 and the Rous-Whipple Award from the American Society for Investigative Pathology in 1998.

2. I am familiar with the Office Action in the `825 application dated February 2, 2000. In particular, I am familiar with the rejection that asserts that the specification does not reasonably enable a person skilled in the art to which it pertains to make or use an invention commensurate in scope with such claims as pending claim 22.

3. Pending claim 22 recites:

> 22. An isolated molecule comprising a polypeptide that induces an hepatitis C virus (HCV)-specific response in cytotoxic T lymphocytes having a sequence that

(a) ***has no more than a total of two single amino acid substitutions, deletions or insertions*** at the corresponding amino acid positions in a CTL epitope which is

(1) LLALLSCLTV ($Core_{178-187}$; SEQ ID NO:2),
(2) QLRRHIDLLV ($E1_{257-266}$; SEQ ID NO:3),
(3) KLVALGINAV ($NS3_{1406-1415}$; SEQ ID NO:28), or
(4) LLFNILGGWV ($NS4_{1807-1816}$; SEQ ID NO:35), or

(b) ***has no more than one single amino acid substitution, deletion or insertion*** at the corresponding amino acid positions as in a CTL epitope which is

(5) ADLMGYIPLV ($Core_{131-140}$; SEQ ID NO:1),
(6) DLMGYIPLV ($Core_{132-140}$; SEQ ID NO:54),
(7) LLCPAGHAV ($NS3_{1169-1177}$; SEQ ID NO:26),
(8) SLMAFTAAV ($NS4_{1789-1797}$; SEQ ID NO:34), or
(9) ILDSFDPLV ($NS5_{2252-2260}$; SEQ ID NO:42),

wherein said molecule comprises at least eight amino acids and less than 50 amino acids, with the provisos that (i) when said selected CTL epitope is (8) SLMAFTAAV ($NS4_{1789-1797}$; SEQ ID NO:34), then said molecule comprises from at least eight amino acids to less than 25 amino acids, (ii) when said selected CTL epitope is (1) LLALLSCLTV ($Core_{178-187}$; SEQ ID NO:2) then said molecule comprises at most ten amino acids, and (iii) when said selected CTL epitope is (6) DLMGYIPLV ($Core_{132-140}$; SEQ ID NO:54), then said molecule comprises at most nine amino acids.

(Emphasis added.)

4. This exemplary claim 22 allows for a very modest amount of variation from the core sequences identified therein.

5. The rejection applies even other particularly focused claims such as claim 65, which reads:

> 65. An isolated molecule comprising a polypeptide that induces an hepatitis C virus (HCV)-specific response in cytotoxic T lymphocytes having a sequence that has
>
> (a) no more than a total of two single amino acid substitutions, deletions or insertions at the corresponding amino acid positions in a CTL epitope which is
>
> LLALLSCLTV ($Core_{178-187}$; SEQ ID NO:2),
> QLRRHIDLLV ($E1_{257-266}$; SEQ ID NO:3),
> KLVALGINAV ($NS3_{1406-1415}$; SEQ ID NO:28), or
> LLFNILGGWV ($NS4_{1807-1816}$; SEQ ID NO:35), or

(b) has no more than one single amino acid substitution, deletion or insertion at the corresponding amino acid positions as in a CTL epitope which is

ADLMGYIPLV ($Core_{131-140}$; SEQ ID NO:1),
DLMGYIPLV ($Core_{132-140}$; SEQ ID NO:54),
LLCPAGHAV ($NS3_{1169-1177}$; SEQ ID NO:26),
SLMAFTAAV ($NS4_{1789-1797}$; SEQ ID NO:34), or
ILDSFDPLV ($NS5_{2252-2260}$; SEQ ID NO:42),

wherein said polypeptide comprises at least eight amino acids and less than 50 amino acids, wherein said selected CTL epitope maintains an

`XaaLeuXaaXaaXaaXaaXaaXaaVal` or
`XaaLeuXaaXaaXaaXaaXaaXaaXaaVal` motif,

with the provisos that (a) when said selected CTL epitope is SLMAFTAAV ($NS4_{1789-1797}$; SEQ ID NO:34), then said polypeptide comprises from at least eight amino acids to less than 25 amino acids, (b) when said selected CTL epitope is LLALLSCLTV ($Core_{178-187}$; SEQ ID NO:2) then said molecule comprises at most ten amino acids, and (c) when said selected CTL epitope is DLMGYIPLV ($Core_{132-140}$; SEQ ID NO:54), then said molecule comprises at most nine amino acids.

6. In my opinion, there was ample guidance in the art, as measured at the time of filing in March of 1994, and in my specification to allow the invention of the above-recited exemplary claims to be practiced without using more than an amount of experimentation that is usual in the art of molecular immunology.

7. For example, the Reece et al. article, which is of record in this application, and which is dated prior to the filing of this application, illustrates that the quantity of experimentation necessary to make and use the present invention was manageable when this application was filed in view of the technology then available. Reece et al., 151 J. IMMUNOL. 6175 (1993) (attached as Exhibit B). In Reece, in excess of one thousand (1,304) overlapping 12 residue peptide fragments were synthesized by the multipin method to map T-cell epitopes of tetanus toxin. Pools of 20 peptides each were used to simplify the mapping assays. (Such a pooling approach is endorsed in my specification for this application at page 16, lines 18-21.) Thus, it was practical to synthesize a large number of peptides, and the initial screen needed only to assay sixty to seventy pools. Pools that generated strong responses were deconvoluted by assaying the members of the pool.

8. The type of experimentation described by Reece could be readily applied to the build variants of the core peptides set forth in my claims, and identify the variants that meet my claims. The cytotoxicity assay described in my specification could be used to identify active pools, and subsequently identify the active peptides from the active (or particularly active) pools. Preferably, peripheral blood monocytes ("PBMCs") are used from a sampling of patients infected with hepatitis C virus ("HCV"), since, as my specification discusses, an antigen can be useful even if not active for all patients.

9. In Reece, the assay used was a PBMC proliferation assay to achieve the relatively high throughput required to assay a number of peptide pools. While I believe that other assays, including cytotoxicity, could in the relevant time frame have been used to achieve a useful amount of screening, Reece's screen would have been recognized as providing a useful initial screen.

10. The types of mapping experiments described by Reece were usual in the relevant time frame. See, for example, Sette et al., 328 NATURE 395 (1987) (attached as Exhibit C); Maryanski et al., 60 CELL 63 (1990) (attached as Exhibit D); and Takahashi et al., 170 J. EXP. MED. 2023 (1989) (attached as Exhibit E). The Sette (see Figure 1), Maryanski (see Table 1) and Takahahi (see Table II) articles are about exactly the kind of mapping experiments relevant to practicing the claimed invention using ordinary experimentation. As discussed in the specification of my patent application:

> In addition, the contributions made by the side chains of the residues can be probed via a systematic replacement of individual residues with a suitable amino acid, such as Gly or Ala. Systematic methods for determining which residues of a linear amino acid sequence are required for binding to a specific MHC protein, one of the characteristics of the peptides of the present invention, are known. See, for instance, Allen et al., Nature, 327, 713-717; Sette et al., Nature, 328, 395-399; Takahashi et al., J. Exp. Med., 170, 2023-2035 (1989); and Maryanski et al., Cell, 60, 63-72 (1990).

11. Further guidance to help avoid undue experimentation are the conclusions of Falk et al. on the binding preference of HLA-A2.1, based on extracted bound peptides:

> The second position contained a strong signal for Leu and an intermediate one for Met. Positions 3-5 had 6-8 residues each.

> Position 6 contained Val, Leu, Ile and Thr. Each of the following two positions had three signals. Position 9 had a strong Val and a weak Leu signal.

Falk et al., 351 NATURE 290 (1991) (attached as Exhibit F). More detailed guidance is found in the data of Table 4 of the Falk article.

12. Moreover, the pooled peptide technique of Reece can be used to present relevant pools to peripheral blood monocytes, and extract peptides from MHC complexes, thereby identifying peptides that are actually presented by MHC molecules This information identifies stronger candidate peptides for use in cytotoxicity assays.

13. Still further guidance could be found by looking to the natural variations corresponding to the recited core sequences, of which there was not insubstantial knowledge in the relevant time frame. See, Houghton et al., 14 HEPATOLOGY 381 (1991) (attached as Exhibit G); and Ching et al., 89 PROC. NATL. ACAD. SCI. USA 3190 (1992) (attached as Exhibit H).

14. In conclusion, in the relevant time frame there were ample tools with which to practice the invention using ordinary experimentation. The literature of the era confirms that the experimentation described here was ordinary to the art of molecular immunology.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

July 25, 2000
Dated

by Francis V. Chisari

Curriculum Vitae

July, 2000

FRANCIS V. CHISARI, M.D.

Professor

The Scripps Research Institute
10550 North Torrey Pines Road
La Jolla, CA 92037 USA

Phone (858) 784-8228
Fax (858) 784-2160
e-mail: fchisari@scripps.edu

Date of Birth: April 5, 1942

Place of Birth: New York, New York

Citizenship: USA

Marital Status: Married, Linda Kornet, two children

Education: B.A., Magna cum laude, Fordham University, 1963

M.D., Cornell University Medical College, 1968

Scholastic Honors: Phi Beta Kappa, 1963; Alpha Omega Alpha 1967

Training:

Anatomic Pathology: Fellow, Cornell University Medical College, New York, 1966-1967.

Fellow, Mayo Clinic, Rochester, Minnesota 1969-1970.

Internal Medicine: Intern, The New York Hospital-Cornell University Medical Center, New York, New York 1968-1969.

Resident, Mary Hitchcock Memorial Hospital, Dartmouth Medical School, Hanover, New Hampshire 1972-1973.

Immunopathology: Staff Associate, Laboratory of Pathology, Division of Biological Standards, National Institutes of Health, Bethesda, Maryland 1970-72.

Research Fellow, Department of Experimental Pathology, Scripps Clinic and Research Foundation, La Jolla, California 1973-1975.

Molecular Biology: Fogarty Scholar, Unite de Recombinaison et Expression Genetique, Institut Pasteur, Paris, France 1983-1984.

Board Certification: Internal Medicine, 1973; Anatomic Pathology, 1975.

National Service: United States Public Health Service, National Institutes of Health, Bethesda, Maryland 1970-1972.

Employment:

1975-1981	Assistant Professor, Departments of Molecular Immunology and Clinical Research, Scripps Clinic and Research Foundation, La Jolla, California
1976-1981	Assistant Adjunct Professor, Department of Pathology, University of California, San Diego School of Medicine, La Jolla, California
1976-1983	Head, Division of Diagnostic Immunopathology, Department of Pathology, Green Hospital of Scripps Clinic, Scripps Clinic and Research Foundation, La Jolla, California
1981 - 1988	Associate Professor, Department of Basic and Clinical Research, Research Institute of Scripps Clinic, La Jolla, California
1982-1987	Associate Adjunct Professor, Department of Pathology, University of California, San Diego, School of Medicine, La Jolla, California
1984-1989	Associate Director, General Clinical Research Center, Research Institute of Scripps Clinic, La Jolla, California
1987-1998	Adjunct Professor, Department of Pathology, University of California, San Diego, School of Medicine, La Jolla, California
1988-Present	Professor and Head, Division of Experimental Pathology, Department of Molecular and Experimental Medicine, The Scripps Research Institute, La Jolla, California
1989-Present	Director, General Clinical Research Center, The Scripps Research Institute, La Jolla, California

Review Committees and Advisory Boards:

-Pathology B Study Section and Reviewers' Reserve, National Institutes of Health, 1988-1992

-Zoological Society of San Diego: Research, Animal Health, Conservation Committee, 1986-90

-Scientific Advisory Board, DNX Corporation, Princeton, New Jersey, 1989-1993

-Scientific Review Board, German Cancer Research Center, Heidelberg, Germany, 1990-91

-Hepatitis Panel, US-Japan Cooperative Medical Science Program, 1992-1998

-Hepadnaviridae Study Group, International Committee and Taxonomy of Viruses, 1994-present
-Scientific Advisory Board, Liver Research Ctr., Albert Einstein Coll. of Medicine, 1995-2000
-Nominating Committee, American Society for Investigative Pathology, 1999-present
-Distinguished Advisory Committee, UCSD Cancer Center, 2000-present

Editorial Positions:

American Journal of Pathology; American Journal of Physiology; Diagnostic Molecular Pathology; Gastrointestinal and Liver Physiology; Journal of Clinical Investigation; Journal of Experimental Pathology; Hepatology; inScight Daily Science News Service; Microbial Pathogenesis; Transgene; Transgenic Research; Viral Immunology; Virology.

Professional Societies:

Association of American Physicians, American Society for Virology, American Association of Immunologists, American Society for Investigative Pathology, American Association for Cancer Research, American Association for the Advancement of Science, American Federation for Clinical Research, Western Association of Physicians, American College of Physicians, Molecular Medicine Society.

Honors and Awards:

Research Career Development Award, NIH, 1976-1981.
Elected Member, Association of University Pathologists, 1978
Fogarty Senior International Fellowship, NIH, 1983-1984.
National Research Service Senior Fellowship, NIH, 1983-1984.
Foreign Scholar, Fondation pour la Recherche Medicale, Paris, France, 1984.
Honorary Member, Society of Medicine and Natural Sciences, Univ. of Parma, Italy, 1985.
MERIT Award, NIH, 1990-2000.
Elected Member, Association of American Physicians, 1992.
Sheila Sherlock Award for Excellence in Liver Research, University of Toronto, 1992.
Maud L. Menten Award in Experimental Pathology, University of Pittsburgh, 1996.
Elected Fellow, American Association for the Advancement of Science, 1996.
Ernst Jung Prize in Medicine, Jung-Stiftung für Wissenschaft und Forschung, Hamburg 1997.
First Distinguished Scientific Achievement Award, American Liver Foundation, 1997.
Rous-Whipple Award, American Society for Investigative Pathology, 1999.
Distinguished Achievement Award, American Association for the Study of Liver Diseases, 1999.
Elected Member, The Henry Kunkel Society, 1999.

ABSTRACTS

Named Lectureships:

Peter Ciano Memorial Lecture, Harvard Medical School, 1992.

Henry Moon Memorial Lecture, University of California San Francisco, April 1992.

Karl F. Meyer Lectureship in Microbiology, University of California San Francisco, 1997.

Shipley Symposium Lectureship in Microbial Pathogenesis, Harvard Medical School, 1997.

Bertram-Marx Lectureship in Microbiology, Univ. of Alabama, Birmingham, 1998.

Distinguished Lecturer in Medical Sciences, Mayo Clinic, 1999.

Saul Krugman Memorial Lectureship, Honors Lecture Series, New York University, 1999.

U.S. Patents

U.S. Patent 4,599,230; 4,599,231 (7/8/86)
Synthetic hepatitis B virus vaccine including both T cell and B cell determinants.

U.S. Patent 4,683,136 (7/28/87)
Proteinaceous antigens with conformation dependent determinants.

U.S. Patent 5,709,995 (1/20/98)
Hepatitis C virus-derived peptides capable of inducing cytotoxic T lymphocyte responses.

U.S. Patents 5,780,036 (7/14/98); 5,788,969 (8/4/98); 5,840,303 (11/24/98); 5,932,224 (8/3/99)
Peptides for inducing cytotoxic T lymphocyte responses to hepatitis B virus.

UCLA Symposium: Animal Models of Human Diseases; Transgenic Modeling of HBV Pathogenesis, Keystone, CO, March 1990

American Association for the Study of Liver Diseases Conference on Immunobiology and the Liver; Immunologically Mediated Liver Cell Injury in HBV Infection, Washington, DC, April, 1990

Chairman, Symposium on Transgenic Models of Cell Injury, FASEB Conference, Washington, DC, April 1990

International Symposium on Viral Hepatitis; Immunopathogenesis of Viral Hepatitis, Houston, TX, April 1990

International Papillomavirus Workshop; Expression of DNA Tumor Viruses in Transgenic Mice, Heidelberg, Germany, May 1990

15th International Cancer Congress of the International Union Against Cancer, Session Chairman, Symposium on Hepadnavirus and Primary Liver Cancer, Hamburg, August 1990

UCSD Symposium on Molecular Biology of Hepatitis B Viruses, Session Chairman, Immunobiology and Pathogenesis, San Diego, CA, August, 1990

13th International Congress of Virology, Berlin, Germany, August 1990

Cold Spring Harbor Symposium, Origins of Human Cancer, New York, NY, September 1990

Workshop on Hepatocellular Carcinoma, National Institutes of Health, Bethesda, MD, September 1990

ABSTRACTS

Concepts in Molecular Biology, course sponsored by the National Cancer Institute and the American Association of Pathologists, Bethesda, MD, November 1990

Symposium on Cellular Growth and Malignancy, Coordinating Council for Cancer Research, Massachusetts General Hospital Cancer Center, Boston, MA, April 1991

US-Japan Cooperative Science Program on Viral Hepatitis, New York, NY, May 1991
University of Rome Symposium on Chronic Viral Hepatitis, Rome, Italy, May 1991

International Symposium on Gene Expression during Liver Differentiation and Disease, Sorrento, Italy, June, 1991

FASEB Summer Research Conference on Molecular Mechanisms of Carcinogenesis, Saxton's River, Vermont, July, 1991

Institut Pasteur Symposium on Molecular Biology of Hepatitis B Viruses, Paris, France, October 1991

Concepts in Molecular Biology, course sponsored by the National Cancer Institute and the American Association of Pathologists, Bethesda, MD, November 1991

Co-organizer, AFIP-UAREP Symposium on Transgenic Animal Models, Washington, DC, November 1991.

First AACR/EACR Joint Conference on Concepts and Molecular Mechanisms of Multistage Carcinogenesis, Santa Margherita, Italy, November 1991

Third International Symposium on Viral Hepatitis and Hepatocellular Carcinoma, Taipei, Taiwan, ROC, December 1991

US-Japan Cooperative Science Program on the Molecular Genetics of Hepatocellular Carcinoma, Honolulu, Hawaii, February 1992

Keystone Symposium on Cell Biology of Virus Entry, Replication and Pathogenesis, Taos, NM, February 1992

UCI/ICN Symposium on Viral Latency and Persistence, Newport Beach, CA, March 1992

The 1992 International Symposium on Pathobiology of Viral Hepatitis and Liver Diseases, Tokyo, Japan, April 1992

US-Japan Cooperative Science Program on Viral Hepatitis, Tokyo, Japan, April, 1992

Henry Moon Memorial Lecture, Molecular Pathogenesis of Hepatocellular Carcinoma, University of California, San Francisco, April 1992

ABSTRACTS

Sheila Sherlock Liver Research Award Lecture, University of Toronto, Canada, May 1992

Immunology Seminar Series, Washington University School of Medicine, St. Louis, MO, May 1992

Monsanto Company, St. Louis, MO, May 1992

FASEB Summer Conference on Liver Regeneration and Hepatocarcinogenesis, Session Chairman., Copper Mountain, CO, July 1992

Genentech, Inc., So. San Francisco, CA, August, 1992

Molecular Biology of Hepatitis Viruses, Meeting Organizer, San Diego, CA September 1992

Falk Symposium on Immunology and the Liver, Basel, Switzerland, October 1992

"Hepatitis B virus: Molecular biology and markers". UCSD Basic Science and Pathology Seminar, Hepatitis B Virus: Molecular Biology and Markers, San Diego, CA, January 6, 1993

"Viral expression and hepatocarcinogenesis in hepatitis B virus transgenic mice". Triangle Virology Club at Duke University, January 27, 1993.

"Cytotoxic T cell response to hepatitis B virus in man and the transgenic mouse". University of North Carolina School of Medicine, Virology Department Lecture, Chapel Hill, N.C., January 28, 1993

"Liver Fibrosis and hepatocellular carcinoma". UCSD Basic Science and Pathology Seminar, Liver Fibrosis and Hepatocellular Carcinoma, San Diego, CA, February 3, 1993

"Cytotoxic T cell mediated fulminant hepatitis in hepatitis B virus transgenic mice", Western Association of Physicians Annual Meeting, Carmel, CA February 17-18, 1993

"The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus". Keystone Symposium, Molecular Immunology of Virus Infections, Taos, N.M., March 21, 1993.

"HBV-transgenic mouse systems". Cold Spring Harbor Laboratories Biannual Liver Conference, Regulation of Liver Gene Expression in Health and Disease, Cold Spring Harbor, N.Y., May 5-9, 1993.

"Pathogenesis for viral and autoimmune hepatitis". 8th Triennial Congress, International Symposium on Viral Hepatitis and Liver Disease, Tokyo, Japan, May 10-14, 1993

"The transgenic mouse model for the study of HBV pathogenesis". Biology, Immunopathology and Clinic of Hepatitis Viruses, Parma Italy, June 3-5, 1993

ABSTRACTS

"Class I restricted immunopathogenesis is a multistep process in HBsAg transgenic mice". 1993 Meeting on the Molecular Biology of Hepatitis B Viruses, Georgetown University, Rockville, MD August 1-5, 1993

"Mechanisms of hepatocarcinogenesis in hepatitis B virus infection". Viruses in Cancer Symposium, Harvard School of Medicine, Boston, MA, Oct. 15, 1993

"The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus in man and transgenic mice". 1993 Hepatitis Symposium, Abbott Laboratories, Abbott Park, IL Nov. 1-3, 1993

"The cytotoxic T cell response in the hepatitis B virus in man and transgenic mice". Biogen Symposium-Interferon Response and Immunity to Hepatitis Virus, Cambridge, MA, Nov. 12, 1993.

"The class I restricted CTL response to predetermined epitopes in hepatitis B and C viruses". T Cell Mediated Immunity to Hepatitis C Virus Minisymposium, Chiron Corporation, Emeryville, CA Dec. 2-3, 1993

"Immunobiology and Pathogenesis of Hepatitis B in Humans and Transgenic Mice". University of California at Los Angeles, Department of Microbiology and Immunology, Los Angeles, CA January 10, 1994.

"Lymphocyte effector function." The 33rd Midwinter Conference of Immunologists, Asilomar, CA, January 22-25, 1994.

"Immunobiology and pathogenesis of hepatitis B virus infection". The VIth International Symposium on Viral Hepatitis in Madrid, Spain, Feb. 3-5, 1994.

"A transgenic mouse model of viral hepatitis". American Society for Investigative Pathology Workshop on Hepatitis Injury Responses and Carcinogenesis. Anaheim, CA, Apr. 24, 1994.

"Hepatitis B virus immunobiology and pathogenesis". Virology Course, Rockefeller University, New York, N.Y., May 5, 1994.

"Hepatitis B virus: Cytotoxic T cell responses in man and transgenic mice". Immune Response Corp., Carlsbad, CA, Sep. 14, 1994.

"Can cytotoxic T lymphocytes destroy the hepatitis B virus without killing the infected cell?" Molecular Biology of Hepatitis B Virus Meeting, Paris, France, Oct. 3-6, 1994.

"Can cytotoxic T lymphocytes inactivate the hepatitis B virus without killing the cell?" IRIS Symposium "Molecular Mechanisms of Microbial Pathogenesis", Siena, Italy, Oct. 23-26, 1994.

"Viral mechanisms of liver injury". Fourth Annual Irwin M. Arias M.D. Symposium (American Liver Foundation), "Bridging Basic Science and Liver Disease," Boston, MA, Nov. 9, 1994.

ABSTRACTS

"HBV immunobiology and pathogenesis in transgenic mice" Innovir Laboratories, New York, N.Y., Nov. 10, 1994.

"Molecular Aspects of Viral induced inflammatory disease". Keystone Symposium-Molecular Aspects of Viral Immunity, Jan. 16-20, 1995.

"Intracellular inactivation of the hepatitis B virus by the immune response". U.S.-Japan Cooperative Hepatitis Panel Meeting, Tokyo, Japan, Jan. 23-24, 1995.

"Intracellular inactivation of hepatitis B virus replication by the immune response". Immunology Seminar Series, Massachusetts General Hospital, Boston, MA, May 11, 1995.

"The curative immune response to hepatitis B virus". American Association for the Study of Liver Diseases, Digestive Diseases Week State-of-the-Art Lecture, San Diego, CA, May 16, 1995.

"Intracellular inactivation of the hepatitis B virus by immune response". 1995 Gordon Research Conference, Viruses and Cells (Pathogenesis Session Chairman), Tilton, NH June 12, 1995

"Immunopathogenesis of hepatitis B virus infection". 1995 Annual meeting of the Italian Association for the Study of the Liver, Rome, Italy, June 15-16, 1995.

"Antiviral effects of HBV DNA-based immunization in transgenic mice that replicate the hepatitis B virus". The Molecular Biology of Hepatitis B Viruses Meeting, San Diego, CA, July 23-27, 1995.

"Intracellular inactivation of the hepatitis B virus by the immune response". 9th International Congress of Immunology, San Francisco, CA, July 25, 1995.

"The cytotoxic T lymphocyte response to the hepatitis C virus". Third International Symposium on Hepatitis C Virus, and Fifth International Symposium on Hepatitis D Virus and Liver Disease (Immunology and Pathogenesis Session Chairman), Queensland, Australia, August 28-September 3, 1995.

"Immune activation of intracellular pathways for the clearance of HBV". Pasteur 100th Anniversary Meeting on Vaccines. Institut Pasteur, Paris, France, September 24-28, 1995.

"Intracellular inactivation of the hepatitis B virus by the immune response". Hepatitis B virus Therapeutics Workshop, Hepatitis B Foundation, Jefferson Medical College, Princeton, NJ, September 28, 1995.

"Intracellular inactivation of the hepatitis B virus by the immune response". Bristol-Myers Squibb Symposium on the Molecular Pathogenesis of Viruses, New York, N.Y., December 7-8, 1995.

ABSTRACTS

"Cytopathic and noncytopathic pathways for immune mediated clearance of the hepatitis B virus by cytotoxic T lymphocytes and inflammatory cytokines". U.S.-Japan Hepatitis Panel Meeting, Kona, Hawaii, Jan. 16-17, 1996.

"Hepatitis B virus specific cytotoxic T lymphocyte responses following recovery from acute and chronic HBV infection", U.S.-Japan Hepatitis Panel Meeting, Kona, Hawaii, Jan. 16-17, 1996.

"Pathogenetic and curative aspects of the immune response to hepatitis B virus" University of Southern California Center for Liver Diseases, Los Angeles, CA, Feb. 8, 1996.

"To kill or to cure: Options in host defense against viral infections". Fifteenth Maud L. Menten Lecture, University of Pittsburgh School of Medicine, Department of Pathology, Pittsburgh, PA, Feb. 21, 1996.

"To kill or to cure: Options in host defense against viral infections". Concepts in Biology and Medicine: The Scripps Research Institute Faculty Lecture Series 1996, the Scripps Research Institute, La Jolla, CA, April 9, 1996.

"Intracellular inactivation of the hepatitis B virus by the immune response". Bristol-Myers Squibb Seminar Series, New York, N.Y., Apr. 19, 1996.

"Pathogenesis of Viral Hepatitis". IX Triennial International Symposium on Viral Hepatitis and Liver Disease, Rome, Italy, Apr. 21-25, 1996.

"CTL in HBV infection: Noncytolytic clearance mechanisms." Meeting of Investigators in HIV-Specific CTL, Annecy, France, May 21, 1996.

"To Kill or to Cure: Options in Host Defense against Viral Infections." Mini-Symposium: Potential Impact of an Immunomodulator for Treatment Of Viral Diseases, Pfizer, Inc., Groton, CT, Sept. 4, 1996.

"To Kill or to Cure: Options in Host Defense against Viral Infections." Rockefeller University Friday Lectures, Rockefeller University, New York, NY, Sept. 6, 1996.

"Intracellular Inactivation Of The Hepatitis B Virus By The Immune Response". McArdle Colloquium Series, University of Wisconsin-Madison, Madison, WI, Sept. 17, 1996.

"MHC Class II Restricted T Cells Can Cause Hepatitis And Suppress Viral Replication In HBV Transgenic Mice." Cold Spring Harbor Symposium on Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor, NY, Sept., 1996.

DNA Vaccines and Cytokines." Princeton Workshop: Therapeutic Strategies for HBV Disease,Hepatitis B Foundation, Princeton, NJ, Sept. 23, 1996.

"Intracellular Inactivation Of The Hepatitis B Virus By The Immune Response." Stanford University Department of Microbiology and Immunology Seminar Series, Stanford University, Stanford, CA, Oct. 11, 1996.

ABSTRACTS

"Hepatitis B Virus Immunology And Pathogenesis." Annual Meeting of the Argentine Society for Immunology, Buenos Aires, Argentina, Oct., 1996.

"Immunological Mechanisms Of Viral Clearance In HBV Transgenic Mice." American Association for the Study of Liver Diseases Research Workshop, Chicago, IL, Nov. 10, 1996.

"Intracellular Inactivation Of The Hepatitis B Virus By The Immune Response." U.S.-Japan Hepatitis Panel Meeting, Nagasaki, Japan, Nov. 16, 1996.

"To Kill or to Cure: Options in Host Defense against Viral Infections." K.F. Meyer Memorial Lecture, University of California-San Francisco, San Francisco, CA, Feb. 26, 1997.

"Control of hepatitis B virus replication by the immune response." Gene Expression in Cellular and Viral Systems, University of Heidelberg, Germany, February 27, 1997.

"Hepatitis B virus inactivation by CTL and inflammatory cytokines." 1st Kanazawa International Symposium on Cancer, Kanazawa, Japan, March 11, 1997.

"Regulation of hepatitis B virus gene expression and replication by the immune response." Spring Seminar, Istituto Ricerche Di Biologia Molecolare, Rome, Italy, April 1-2, 1997.

"Pathogenesis of persistent HBV infection." 32nd Annual Meeting, European Association for the Study of Liver Disease, London, UK, April 9-12, 1997.

"Hepatitis B virus inactivation by cytotoxic T lymphocytes and inflammatory cytokines." Regulation of Liver Gene Expression in Health and Disease, Cold Spring Harbor, NY, April 30-May 4, 1997.

"Hepatitis B virus inactivation by cytotoxic T lymphocytes." 16th Annual Meeting, American Society for Virology, Bozeman, MT, July 19-23, 1997.

"Immunological basis of hepatocellular carcinoma in hepatitis B virus transgenic mice." Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

"Mouse Models of Viral Hepatitis: Insights into persistence and pathogenesis." 2nd International Meeting on Therapy in Liver Diseases, Barcelona, Spain, September 17-19, 1997.

"Intracellular Viral Inactivation During the Immune Response." Shipley Symposium Lectureship in Microbial Pathogenesis, Harvard Medical School, Cambridge, MA, November 21, 1997.

"Intracellular Viral Inactivation During the Immune Response." Virology Seminar Series, University of California - Irvine, Irvine, CA, December 5, 1997.

"Antiviral Immunity: The Hepatitis B Virus Paradigm." USC Spring Seminar Series, University of Southern California, Los Angeles, CA, April 2, 1998.

ABSTRACTS

"Immune Control of Hepatitis B Virus Infection." Stanford Spring Seminar Series, Stanford University School of Medicine, Palo Alto, CA, April 14, 1998.

"Immunological Control of Hepatitis B Virus Infection." National Institutes of Health, Bethesda, MD, April 30, 1998.

"Intracellular Inactivation of the Hepatitis B Virus by the Immune Response." Infectious Disease and Society, State University of New York at Stony Brook, Stony Brook, New York, April 23-24, 1998.

"New Concepts in Viral Pathogenesis: The Hepatitis B Virus Paradigm." University College Dublin, Dublin, Ireland, May 26, 1998.

"Intracellular Inactivation of the Hepatitis B Virus by the Immune Response." FASEB Conference on "Microbial Pathogenesis: Mechanisms of Infectious Diseases, Snowmass, CO, July 4-9, 1998.

"Immune Pathogenesis of Hepatocellular Carcinoma in HBV Transgenic Mice." AACR Special Conference "Cellular Targets of Viral Carcinogenesis," Dana Point, CA, September 24-28, 1998.

"Immune Pathogenesis of Viral Hepatitis." General Meeting of Japan Society of Hepatology, Kanazawa University, Kanazawa, Japan, October 16, 1998.

"Hepatitis B Virus Immunobiology and Pathogenesis". Dept. of Immunology Lecture Series. University of Chicago Medical School, Chicago, IL, November 2, 1998.

Chairman, Meeting on Vaccines for Viral Associated Cancers, National Institutes of Health, Bethesda, MD, November 4, 1998.

"New Concepts in Viral Pathogenesis: The Hepatitis B Virus Paradigm." Bertram-Marx Lectureship, Department of Microbiology, University of Alabama at Birmingham, Birmingham, AL, December 9, 1998.

"Immune Pathogenesis of Hepatocellular Carcinoma." Hepatic Inflammation and Immunity, Galveston, TX, January 15-17, 1999.

"Hepatitis B Virus, the Immune Response and Cancer." Saul Krugman Memorial Lectureship, Honors Lecture Series, New York University School of Medicine, New York, NY, February 22, 1999.

"Hepatitis B Virus Inactivation by Cytotoxic T Lymphocytes." Australian Centre for Hepatitis Virology Workshop, Sydney, Australia, March 19-21, 1999.

"Hepatitis B Virus, the Immune Response and Cancer." Distinguished Lecturer Program in Medical Sciences, Mayo Clinic, Rochester, MN, April 6-8, 1999.

ABSTRACTS

"Viruses, Immunity and Cancer: Lessons from Hepatitis B." Rous-Whipple Recipient 1999 Award Lecture, Experimental Biology, 99', Washington, DC, April 17-21, 1999.

"Intracellular Inactivation of the Hepatitis B Virus by the Immune Response." Gordon Research Conference on Viruses and Cells, Il Ciocco, Lucca, Italy, May 2-7, 1999.

"Immune Pathogenesis of Viral Hepatitis." Liver Development, Gene Regulation, and Disease, Palazzo del Popolo, Orvieto, Italy, June 2-6, 1999.

"The Immune Response to HCV: Lessons from HBV." Keynote Address, International Symposium on Hepatitis C Virus, Washington, DC, June 6-9, 1999.

"Immunological Control of Viral Replication in the Liver." The Ninth Annual Irwin M. Arias, M.D. Symposium, "Bridging Basic Science and Liver Disease," American Liver Foundation, New England Chapter, Boston, MA, November 3, 1999.

"Intracellular Inactivation of the Hepatitis B Virus by Inflammatory Cytokines." Molecular Approaches to Vaccine Design, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, December 2-5, 1999.

"Hepatitis B and C Virus Immunobiology and Pathogenesis." Tenth International Symposium on Viral Hepatitis and Liver Disease, Atlanta, GA, April 9-13, 2000.

"Innate and Acquired Immunity to HBV." Immunology 2000, Joint Meeting of the American Association of Immunologists and Clinical Immunology Society, Seattle, WA, May 12-16, 2000.

"Pathogenesis of HBV Infection." Hepatology 2000, Symposium in Honor of Gustav Paumgartner, Falk Symposium No 117, Munich, Germany, May 4-6, 2000.

"Immune Pathogenesis of Viral Hepatitis." FASEB Summer Research Conference on "Mechanisms of Liver Growth and Differentiation in Health and Diseases". Snowmass Village, CO, July 29-August 3, 2000.

"Immunology of Hepatitis B." Postgraduate Course, 51st AASLD Annual Meeting, Dallas, TX, October 27-31, 2000.

"Host Determinants of Hepadnavirus Purging, Persistence & Pathogenesis". 2001 Keystone Symposium on *Control of Viral Latency and Persistence*, Breckenridge, CO, March 24-29, 2001.

"Noncytopathic Control of Viral Infections by the Immune Response". 2001 Keystone Symposium on *HIV Pathogenesis/AIDS Vaccines in the New Millenium* in Keystone, CO, March 28-April 3, 2001.

"Mechanisms of Non-Lytic CTL Function". 2001 Keystone Symposium on *Molecular Aspects of Viral Immunity*, Keystone, CO, April 17-22, 2001.

"Curative Potential of the Innate and Adaptive Immune Response to Viral Infection". Stanford University School of Medicine. Spring 2001.

ABSTRACTS

BOOKS

1. *The Consumer's Guide to Health Care*. F.V. Chisari, R.M. Nakamura, L. Thorup, eds. Little, Brown and Company; Boston, MA, 1976.

2. *Advances in Hepatitis Research*. Francis V. Chisari, Editor. Masson Publishing Co. Inc., New York, NY, 1984.

3. *Transgenic Models of Human Viral and Immunological Disease.* Current Topics in Microbiology and Immunology. F.V. Chisari and M.B.A. Oldstone, eds. Springer-Verlag, Heidelberg, Germany, 1995.

4. *The Liver: Biology and Pathobiology, 4th Edition.* I.M. Arias, J. Boyer, F.V. Chisari, N. Fausto, D. Schachter and D. Shafritz, eds. Lippincott, Williams & Wilkins, Philadelphia, PA, 2000.

PAPERS

1. Grossman, H., Winchester, P.H., and Chisari, F.V. Roentgenographic classification of renal cystic disease. J. Immunol. 104:319-331, 1968.

2. Deal, D.R., Gerber, P., and Chisari, F.V. Heterotransplantation of two human lymphoid cell lines transformed in vitro by Epstein-Barr virus. J. Natl. Cancer Inst. 47:771-780, 1971.

3. Northrup, R.S., and Chisari, F.V. Response of monkeys to immunization with cholera toxoid, toxin, and vaccine: reversion of cholera toxoid. J. Infect. Dis. 125:471-479, 1972.

4. Northrup, R.S., and Chisari, F.V. Cholera toxoid reactions in human volunteers: clinical and histological studies. Prog. Immunol. Stand. 5:355-364,1972.

5. Chisari, F.V., Hochstein, H.D., Kirschstein, R.L., and Seligmann, E.B. Parathyroid necrosis and hypocalcemic tetany induced in rabbits by L-asparaginase. Am. J. Pathol. 68:461-468, 1972.

6. Barker, L.F., Chisari, F.V., McGrath, P.P., Dalgard, D.W., Kirschstein, R.L., Almeida, J.D., Edgington, T.S., Sharp, D.G., and Peterson, M.R. Transmission of type B viral hepatitis to chimpanzees. J. Infect. Dis. 127 :648-662, 1973.

7. Friedlander, M.H., Chisari, F.V., and Baer, H. The role of the inflammatory response of skin and lymph nodes in the induction of sensitization to simple chemicals. J. Immunol. 111:164-170, 1973.

8. Chisari, F.V., Gerin, J.L., and Edgington, T.S. Immunochemistry of the hepatitis B virus: ^{125}I HBsAg ligand. J. Immunol. 113:543-553, 1974.

9. Chisari, F.V., Northrup, R.S., and Chen, L.C. The modulating effect of cholera enterotoxin on the immune response. J. Immunol. 113:729-739, 1974.

10. Chisari, F.V. and Northrup, R.S. Pathophysiologic effects of lethal and immunoregulatory doses of cholera enterotoxin in the mouse. J. Immunol. 113:740-749, 1974.

11. Chisari, F.V., and Edgington, T.S. Human T lymphocyte E rosette function. I. A process modulated by intracellular cyclic AMP. J. Exp. Med. 140:1122-1126, 1974.

12. Nakamura, R.M., Chisari, F.V., and Edgington, T.S. Laboratory tests for diagnosis of autoimmune diseases. Prog. Clin. Pathol. 6:177-203, 1975.

13. Edgington, T.S., and Chisari, F.V. Immunological aspects of hepatitis B virus infection. Am. J. Med. Sci. 270:212-227, 1975.

14. Chisari, F.V., and Edgington, T.S. Lymphocyte E rosette inhibitory factor: A regulatory serum lipoprotein. J. Exp. Med. 142:1092-1107, 1975.

15. Chisari, F.V., Routenberg, J.A., and Edgington, T.S. Mechanisms responsible for defective human T-lymphocyte sheep erythrocyte rosette function associated with hepatitis B virus infections. J. Clin. Invest. 57:1227-1238, 1976.

16. Edgington, T.S., Chisari, F.V., and Curtiss, L.K. Regulation of lymphocyte function in HBV infection. In Immunopathology: VII International Symposium, Lindau, West Germany, Miescher, P., eds. Schwabe and Co., Stuttgart, pp. 173-190, 1977.

17. Chisari, F.V., Routenberg, J.A., Fiala, M., and Edgington, T.S. Extrinsic modulation of human T-lymphocyte E rosette function associated with prolonged hepatocellular injury after viral hepatitis. J. Clin. Invest. 59:134-142, 1977.

18. Chisari, F.V., Gealy, W.J., and Edgington, T.S. Recovery of soluble sheep erythrocyte receptor from the T lymphocyte surface by proteolytic cleavage. J. Immunol. 118:1138-1142, 1977.

19. Chisari, F.V. Immunoregulatory properties of human plasma very low density lipoproteins. J. Immunol. 119:2129-2136, 1977.

20. Edgington, T.S., and Chisari, F.V. Immune responses to hepatitis B virus coded and induced antigens in chronic active hepatitis. In Immune Reactions in Liver Disease. Eddleston, A., and Williams, R., eds. Pitman Medical, England, pp. 44-60, 1979.

21. Chisari, F.V., Edgington, T.S., Routenberg, J.A., and Anderson, D.S. Cellular immune reactivity in hepatitis B virus-induced liver disease. In Viral Hepatitis. Vyas, G.N., Cohen, H.N., and Schmid, R., eds. Franklin Institute Press, Philadelphia, 1978.

22. Chisari, F.V., and Edgington, T.S. An integrating immunoregulatory hypothesis for the immunopathogenesis of liver disease associated with hepatitis B virus infection. In Persistent

Viruses, Volume XI. Stevens, J., Todaro, G.J., and Fox, C.F., eds., Academic Press, New York, pp. 499-520, 1978.

23. Chisari, F.V. Regulation of human lymphocyte function by a soluble extract from normal human liver. J. Immunol. 121:1279-1286, 1978.

24. Knecht, G.L., and Chisari, F.V. Reversibility of hepatitis B virus-induced glomerulonephritis and chronic active hepatitis after spontaneous clearance of serum hepatitis B surface antigen. Gastroenterology 75:1152-1156, 1978.

25. Chisari, F.V. Immunoflourescent analysis of tissue and serum for hepatitis B virus markers. In Immunoassays in the Clinical Laboratory. Nakamura, R.M., Dito, W.R., and Tucker III, E.S., eds. Alan R. Liss, Inc., New York, pp. 173-183,1979.

26. Routenberg, J.A., Dienstag, J.L., Harrison, W.O., Kilpatrick, M.E., Hooper, R.R., Chisari, F.V., Purcell, R.H., and Fornes, M.F. Foodborne outbreak of hepatitis A: Clinical and laboratory features of acute and protracted illness. Am J. Med. Sci. 278:123-137, 1979.

27. Mohagheghpour, N., Parhami, B., Dowlatshahi, K., Kadjehnourii, D., Elder, J.H., and Chisari, F.V. Immunoregulatory properties of human esophageal tumor extract. J. Immunol. 122:1350-1358, 1979.

28. Chisari, F.V., Immunoregulatory lipoproteins, viral hepatitis and cancer. In Atherosclerosis. Gotto, A.M., Smith, L.C., and Allen, B., eds. Springer-Verlag, New York, pp. 340-347, 1979.

29. Chisari, F.V. Liver-specific protein in perspective. Gastroenterology 78:168-170, 1980.

30. Chisari, F.V., Modulation of the in vivo immune response by human plasma very low-density lipoproteins. Cell Immunol. 52:223-253, 1980.

31. Chisari, F.V., Cellular immunoassays: Investigative tools in clinical research. In Clinical Laboratory Techniques for the 1980's. Nakamura, R.M., eds. Alan R. Liss, Inc., New York, NY, pp. 235-253, 1980.

32. Michelson, J.B., Michelson, P.E., and Chisari, F.V. Subretinal neovascular membrane and disciform scar in Behcet's disease. Am. J. Ophthalmol. 90:182-185, 1980.

33. Chisari, F.V., Castle, K.L., Xavier, C. and Anderson, D.S. Functional properties of lymphocyte subpopulations in hepatitis B virus infection. I. Suppressor cell control of T lymphocyte responsiveness. J. Immunol. 126:38-44, 1981.

34. Chisari, F.V., Bieber, M.S., Josepho, C.A., Xavier, C., and Anderson, D.S. Functional properties of lymphocyte subpopulations in hepatitis B virus infection. II. Cytotoxic effector cell killing of targets that naturally express hepatitis B surface antigen and liver-specific lipoprotein. J. Immunol. 126:45-49, 1981.

35. Michelson, J.B., Michelson, P.E., Bordin, G.M., and Chisari, F.V. Ocular reticulum cell sarcoma. Presentation as retinal detachment with demonstration of monoclonal immunoglobulin light chains on the vitreous cells. Arch. Ophthalmol. 99:1409-1411, 1981.

36. Levy, G.A., and Chisari, F.V. The immunopathogenesis of chronic HBV induced liver disease. Springer Seminar Immunopathol. 3:439-459, 1981.

37. Levy, G.A., and Chisari, F.V. A proposed role for the immune system in the pathogenesis of hepatitis B virus induced liver disease. CRC Crit. Rev. Clin. Lab. Sci. 15:335-353, 1981.

38. Levy, G., and Chisari, F.V. Cellular and molecular interactions responsible for hepatocellular injury in viral hepatitis. In Recent Progress in Clinical Laboratory Immunology. Nakamura, R.M., eds. Masson Publishing Company, New York, pp. 115-128, 1981.

39. Chisari, F.V., Curtiss, L.K., and Jensen, F.C., Physiologic concentrations of normal human plasma lipoproteins inhibit the immortalization of peripheral B lymphocytes by the Epstein-Barr virus. J. Clin. Invest. 68:329-336, 1981.

40. Chisari, F.V., and Curtiss, L.K. Modulation of peripheral blood mononuclear cell cyclic adenosine monophosphate levels by human very low density lipoproteins. Cell Immunol. 65:325-336, 1981.

41. Michelson, J.B. and Chisari, F.V. Behcet's disease. Surv. Ophthalmol. 26:190-203, 1982.

42. Chisari, F.V. and Nowoslawski, A. Immunology and pathogenesis of viral hepatitis. In Proc. of 3rd Internatl. Symp. on Viral Hepatitis. The Franklin Institute Press, Philadelphia, pp. 779-783, 1982.

43. Pizzo, C., Lee, D., and Chisari, F.V. Suppression of lymphocyte activation by a protein released from isolated perfused rat liver. Hepatology 2:295-303, 1982.

44. Sobol, R.E., Astarita, R.W., Chisari, F.V., Griffiths, J.C. and Royston, I. Use of immunoglobulin light chain analysis to detect bone marrow involvement in B-cell neoplasms. Clin. Immunol. Immunopathol. 24:139-144, 1982.

45. Chisari, F.V. Regulation of lymphocyte function and viral transformation by hepatic bioregulatory molecules. Hepatology 2:97S-106S, 1982.

46. Milich, D.R. and Chisari, F.V. Genetic regulation of the immune response to hepatitis B surface antigen (HBsAg). I. H-2 restriction. J. Immunol. 129:320-325, 1982.

47. Huddlestone, J. and Chisari, F.V. Function of lymphocytes and plasma cells in immunity. In Hematology. Williams, W.J., Beutler, E., Erslev, A.J., and Lichtman, M.A., eds. McGraw Hill, New York, 1983.

48. Nichols, W.S., and Chisari, F.V. Structure and function of the lymphoreticular system. In Hematology. Williams, W.J., Beutler, E., Erslev, A.J., and Lichtman, M.A., eds. McGraw Hill, New York, 1983.

49. Parks, D.E., and Chisari, F.V. Production and distribution of lymphocytes and plasma cells. In Hematology. Williams, W.J., Beutler, E., Erslev, A.J., and Lichtman, M.A., eds. McGraw Hill, New York, 1983.

50. Milich, D.R., Leroux-Roels, G.G., and Chisari, F.V. Genetic regulation of the immune response to hepatitis B surface antigen (HBsAg). II. Qualitative characteristics of the humoral immune response to the a, d, and y determinants of HBsAg. J. Immunol. 130:1395-1400, 1983.

51. Milich, D.R., Alexander, H., and Chisari, F.V. Genetic regulation of the immune response to hepatitis B surface antigen (HBsAg). III. Circumvention of nonresponsiveness in mice bearing HBsAg nonresponder haplotypes. J. Immunol. 130:1401-1407, 1983.

52. Leroux-Roels, G.G., Milich, D.R., and Chisari, F.V. Suppression of the acute graft-versus-host reactin in mice by in vitro or in vivo allosensitization in the presence of cyclosporin A. In Intercellular Communications in Leucocyte Function. Wiley, J.W., and O'Brien, R.L., eds. John Wiley & Sons, Ltd., pp. 627-630, 1983.

53. Chisari, F.V., Hepatic immunoregulatory molecules and the pathogenesis of hepatocellular injury in viral hepatitis. In Advances in Hepatitis Research. Chisari, F.V., eds. Masson Publishing Company, New York, pp. 168-178, 1984.

54. Milich, D.R. and Chisari, F.V. Immunogenetics and cellular correlates of the immune response to HBsAg determinants. In Advances in Hepatitis Research. Chisari, F.V., eds. Masson Publishing Company, New York, pp. 91-109, 1984.

55. Molden, D.P. and Chisari, F.V. Immunologic diagnosis of hepatitis virus infection. College of American Pathologists Conference on Immunology, Steamboat, CO, August 1983. In Diagnostic Immunology Technology Assessment and Quality Assurance. Rippey, J.H. and Nakamura, R.M., eds. College of American Pathologists, Publishers, Skokie, IL, p. 229, 1984.

56. Chisari, F.V., Milich, D.R. and Tiollais, P. Hepatitis B virus infection: a model for immunologically mediated hepatocellular injury. In Mechanisms of Hepatocyte Injury and Death. Keppler, D., Reutter, W. and Bianchi, L., eds. MTP Press Limited, Lancaster, PA, p. 293, 1984.

57. Kasahara, Y., Leroux-Roels, G.G., Nakamura, R. and Chisari, F.V. Glycylprolyldiamino-peptidase in human leukocytes: selective occurrence in T lymphocytes and influence on the total serum enzyme activity. Clin. Chim. Acta. 139:295-302, 1984.

58. Milich, D.R., Peterson, D.L. and Chisari, F.V. Comparisons of T cell and B cell immune recognition of HBsAg. In Proceedings of the 4th International Symposium on Viral Hepatitis. Vyas, G.N., Dienstag, and Hoofnagle, J. eds. Grune & Stratton, Inc., Orlando, FL, pp. 573-582, 1984.

59. Milich, D.R., Leroux-Roels, G.G., Louie, R.E., and Chisari, F.V. Genetic regulation of the immune response to hepatitis B surface antigen (HBsAg). IV. Distinct H-2-linked genes control antibody responses to different HBsAg determinants on the same molecule and map to the I-A and I-C subregions. J. Exp. Med. 159:41-56, 1984.

60. Michelson, J.B., Chisari, F.V., and Kansu, T. Antibodies to oral mucosa in patients with ocular Behcet's disease. Amer. J. Ophthalmol. 92:1277-1281, 1985.

61. Milich, D.R., Louie, R.E. and Chisari, F.V. Genetic regulation of the immune response to hepatitis B surface antigen (HBsAg) V. T cell proliferative response and cellular interactions. J. Immunol. 134:4194-4202, 1985.

62. Milich, D.R., Peterson, D.L., Leroux-Roels, G.G., Lerner, R.A. and Chisari, F.V. Genetic regulation of the immune response to hepatitis B surface antigen (HBsAg). VI. T cell fine specificity. J. Immunol. 134:4203-4211, 1985.

63. Milich, D.R., Thornton, G.B., Neurath, A., Kent, S., Michel, M., Tiollais, P., and Chisari, F.V. Enhanced immunogenicity of the pre-S region of hepatitis B surface antigen. Science 228:1195, 1985.

64. Chisari, F.V., Nakamura, M., Milich, D.R., Han, K., Molden, D., and Leroux-Roels, G.G. Production of two distinct and independent hepatic immunoregulatory molecules by the perfused rat liver. Hepatology 5:735-743,1985.

65. Chisari, F.V., Pinkert, C.A., Milich, D.R., Filippi, P., McLachlan, A., Palmiter, R.D. and Brinster, R.L. A transgenic mouse model of the chronic hepatitis B surface antigen carrier state. Science 230:1157-1160, 1985.

66. Milich, D.R., McNamara, M., McLachlan, A., Thornton, G., and Chisari, F.V. Distinct H-2-linked regulation of T cell responses to the pre-S and S regions of the same HBsAg polypeptide allows circumvention of the S region nonresponsiveness. Proc. Natl. Acad. Sci. USA 82:81688172, 1985.

67. Michel, M.-L., Milich, D.R., Chisari, F.V., and Tiollais, P. Synthesis in CHO cells of hepatitis B surface antigen particles containing synthetic pre-S(2) region expression product. In Vaccines '86. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, pp.359-363, 1986.

68. Milich, D.R., Thornton, G.B., McLachlan, A., McNamara, M. and Chisari, F.V. T and B cell recognition of native and synthetic pre-S(2) region determinants on HBsAg. In Vaccines '86. Cold Spring Harbor Press, Cold Spring Harbor, NY, pp. 377-382, 1986.

69. Chisari, F.V., Pinkert, C.A., Milich, D.R., McLachlan, A., Filippi, P., Palmiter, R. and Brinster, R. Hepatitis B virus gene expression in transgenic mice. In Viruses and Human Cancer, UCLA Symposium on Molecular and Cellular Biology, 1986 New Series, Volume 43. Gallo, R.C., Haseltine, G.K. and zur Hausen, H., eds. Alan R. Liss, Inc., New York, NY, pp. 493-507, 1987.

70. Milich, D.R., McLachlan, A., Chisari, F.V., Kent, S.B.H., and Thornton, G.B. Immune response to the pre-S(l) region of the hepatitis B surface antigen (HBsAg): A pre-S(l)-specific T cell response can bypass nonresponsiveness to the pre-S(2) and S regions of the HBsAg. J. Immunol. 137:315-322, 1986

71. Milich, D.R., McLachlan, A., Chisari, F.V., and Thornton, G.B. Nonoverlapping T and B cell determinants on and hepatitis B surface antigen (HBsAg) pre-S(2) region synthetic peptide. J. Exp. Med. 164(2):532-547,1986.

72. Milich, D.R., McLachlan, A., Chisari, F.V., Nakamura, T. and Thornton, G.B. Two distinct but overlapping antibody binding sites in the pre-S(2) region of HBsAg localized within 11 continuous residues. J. Immunol. 137:2703-2710, 1986.

73. Chisari, F.V., Filippi, P., McLachlan, A., Milich, D.R., Riggs, M., Lee, S., Palmiter, R.D., Pinkert, C.A. and Brinster, R.L. Expression of hepatitis B virus large envelope polypeptide inhibits hepatitis B surface antigen secretion in transgenic mice. J. Virol. 60:880-887, 1986.

74. Ferrari, C., Penna, A., Sansoni, P., Giuberti, T., Neri, T.M., Chisari, F.V. and Fiaccadori, F. Selective sensitization of peripheral blood T lymphocytes to hepatitis B core antigen in patients with chronic active hepatitis type B. Clin. Exp. Immunol. 67:497-506, 1986.

75. McLachlan, A., Milich, D.R., Raney, A.K., Riggs, M.G., Hughes, J.L., Sorge, J., and Chisari, F.V. Expression of hepatitis B virus surface and core antigen: Influences of pre-S and precore sequences. J. Virol. 61:683-692, 1987.

76. Leffert, H.L., Koch, K.S., Shapiro, P., Skelley, H., Hubert, J., Monken, C., Lad, P.J., SalaTrepat, J. and Chisari, F.V. Primary cultures, monoclonal antibodies and nucleic acid probes as tools for studies of hepatic structure and function. In Cirrhosis of the Liver, Methods, and Fields of Research. Tygstrup, N., and Orlandi, F., eds., pp. 121-140, 1987.

77. Ferrari, C., Mondelli, M.U., Penna, A., Fiaccadori, F., and Chisari, F.V. Functional characterization of cloned intrahepatic, hepatitis B virus nucleoprotein-specific helper T cell lines. J. Immunol. 139:539-544, 1987.

78. Ferrari, C., Penna, A., Giuberti, T., Tong, M.J., Ribera, E., Fiaccadori, F., and Chisari, F.V. Intrahepatic, nucleocapsid antigen-specific T cells in chronic active hepatitis B. J. Immunol. 139:2050-2058, 1987.

79. Chang, F.S., Chisari, F.V., and Lee, S. Allogeneic heart-lung transplantation in mice. Microsurgery 8:57-62, 1987.

80. Chisari, F.V., Filippi, P., Buras, J., McLachlan, A., Popper, H., Pinkert, C.A., Palmiter, R.D., and Brinster, R.L. Structural and pathological effects of synthesis of hepatitis B virus large envelope polypeptide in transgenic mice. Proc. Natl. Acad. Sci. USA 84:6909-6913, 1987.

81. Ferrari, C., Fiaccadori, F. and Chisari, F.V. Molecular biology and pathogenesis of hepatitis B. Ital. J. Gastroenterol. 19:224-230, 1987.

82. Koziol, J.A., Ferrari, C. and Chisari, F.V. Evolution of monoclonality of cell lines from sequential dilution assays. J. Immunol. Methods 105:139-143, 1987.

83. Thornton, G.B., Milich, D.R., Chisari, F.V., Mitamura, K., Kent, S.B., Neurath, R., Purcell, R., and Gerin, J. Immune response in primates to the pre-S(2) region of hepatitis B surface antigen: Identification of a protective determinant. In Vaccines '87. Cold Spring Harbor Press, Cold Spring Harbor, NY, pp. 77-80, 1987.

84. Raney, A.K., Milich, D.R., Hughes, J.L., Sorge, J., Chisari, F.V. and McLachlan, A. Expression of hepatitis B core and e antigens using recombinant amphotropic retroviral vectors. In Hepadna Viruses, UCLA Symposium on Molecular and Cellular Biology, Volume 70, Robinson, W., Koike, K., and Will, H., eds. Alan R. Liss, Inc., New York, NY pp. 253-264, 1987.

85. Buras, J., Filippi, P., McLachlan, A., Pinkert, C.A., Palmiter, R.D., Brinster, R.L. and Chisari, F.V Suppression of HBsAg secretion and induction of an HBsAg filament storage disease by overproduction of the hepatitis B virus large envelope polypeptide in transgenic mice. In Hepadna Viruses, UCLA Symposium on Molecular and Cellular Biology, Volume 70. Robinson, W., Koike, K. and Will, H, eds. Alan R. Liss, Inc., New York, NY, pp. 387-395, 1987.

86. Michelson, J.B. and Chisari, F.V. Antibodies to oral mucosa in patients with ocular Behcet's disease. ACTA XXV Concilium Ophthalmologicum. Kogler Ghedini, Amsterdam, pp. 1712-1717, 1987.

87. Raney, A.K., Milich, D.R., Hughes, J.L., Sorge, J., Chisari, F.V. and McLachlan, A. Retroviral-mediated transfer of hepatitis B surface antigen expression. In: Viral Hepatitis and Liver Disease, 1987 International Symposium, Alan R. Liss, Inc., New York, NY pp. , 1988.

88. Ferrari, C., Penna, A., Mondelli, M., Fiaccadori, F., and Chisari, F.V. Intrahepatic HBsAg specific regulatory T cell networks in chronic active hepatitis B. In: Viral Hepatitis and Liver Disease, 1987 International Symposium, Alan R. Liss, Inc., New York, NY pp. 641-644, 1988.

89. Filippi, P., Buras, J., McLachlan, A., Popper, H., Pinkert, C.A., Palmiter, R.D., Brinster, R.L. and Chisari, F.V. Overproduction of hepatitis B virus large envelope polypeptide causes filament storage, ground glass cell formation, hepatocellular injury and nodular hyperplasia

in transgenic mice. In: Viral Hepatitis and Liver Disease, 1987 International Symposium, Alan R. Liss, Inc., New York, NY pp. 632-640, 1988.

90. Lee, S., Scott, M.H., Yancey, D., Allen, J., Chang, E.S., Chisari, F.V. and Moossa, A.R. Long term studies of pancreas allotransplantation in experimental diabetes mellitus. Microsurgery 9:217- 221, 1988.

91. Ferrari, C., Chisari, F.V., Ribera, E., Penna, A. and Mondelli, M.U. Functional modulation of hepatitis B virus core antigen-specific T lymphocytes by an autoreactive T cell clone. J. Immunol. 141:1155-1160, 1988.

92. Chisari, F.V. New model systems for hepatitis B virus research. Lab Invest. 59:155, 1988.

93. Fiaccadori, F., Mondelli, M.U., Penna, A., Chisari, F.V., Ferrari, C. Isolation and functional characterization of circulating HBsAg-specific and autoreactive T cell clones in chronic active hepatitis B. In Pathophysiology of the Liver, Gentilini, P., Dianzani, M.U., eds. Excerpta Medica, pp. 109-117, 1988.

94. Raney, A.K., Milich, D.R., Hughes, J.L., Sorge, J., Chisari, F.V., Mondelli, M.U. and McLachlan, A. Retroviral-mediated transfer and expression of hepatitis B e antigen in human skin fibroblasts and B lymphocytes. Virology 168:31-39, 1989.

95. Chisari, F.V. Analysis of hepatitis B virus gene expression in transgenic mice. In Concepts in Viral Pathogenesis, III. Notkins, AL. and Oldstone, M.B.A., eds. Springer-Verlag, New York, NY, pp. 164-170, 1989.

96. Chisari, F.V. The hepatitis B virus large envelope polypeptide can cause liver cell injury and multifocal nodular hyperplasia in transgenic mice. In Proceedings of 1988 Falk Symposium on Liver Cell Carcinoma. Keppler, D., ed. Kluwer Academic Publishers, pp. 165-168, 1989.

97. Chisari, F.V., Klopchin, K., Moriyama, T., Pasquinelli, C., Dunsford, H., Sell, S., Pinkert, C.A., Brinster, R.L., and Palmiter, R.D. Molecular pathogenesis of hepatocellular carcinoma in hepatitis B virus transgenic mice. Cell 59:1145-1156, 1989.

98. Chisari, F.V., Hepatitis B virus gene expression in transgenic mice. Mol. Biol. Med. 6:143-149, 1989.

99. Chisari, F.V., Ferrari, C., and Mondelli, M.U. Hepatitis B virus structure and biology. Microbial Pathogenesis 6:311-325, 1989.

100. Mondelli, M.U., Parks, D.E., and Chisari, F.V. Production and distribution of lymphocytes and plasma cells. In Hematology, Williams, W.J., Beutler, E., Erslev, A.J., and Lichtman, M.A., eds. McGraw-Hill, New York, NY, pp. 945-950, 1989.

101. Nichols, W.S., and Chisari, F.V. Structure and function of the lymphoid tissues. In Hematology. Williams, W.J., Beutler, E., Erslev, A.J., and Lichtman, M.A., eds. McGraw-Hill, New York, NY, pp. 48-54, 1989.

102. Mondelli, M.U. and Chisari, F.V. Approaches to the immunobiology and pathogenesis of hepatitis B virus infection in man. In Immunopathology of Liver Disease, Thomas, H.C., ed., Springer-Verlag, 1990.

103. Ferrari, C., Penna, A., Cavalli, A., Bertoletti, A., Giuberti, T., Degli Antoni, A., Valli, A., Chisari, F.V., and Fiaccadori, F. Functional study of intrahepatic T cells during chronic hepatitis B virus infection. In Systematic and Quantitative Hepatology: Pathophysiological and Methodological Aspects. Molin, G.P., ed., Masson, Milan, Italy, pp. 251-258, 1990.

104. Moriyama, T., Guilhot, S., Klopchin, K., Moss, B., Pinkert, C.A., Palmiter, R.D., Brinster, R.L., Kanagawa, O. and Chisari, F.V. Immunobiology and pathogenesis of hepatocellular injury in hepatitis B virus transgenic mice. Science 248:361-364, 1990.

105. Dunsford, H.A., Sell, S., and Chisari, F.V. Hepatocarcinogenesis due to chronic liver cell injury in hepatitis B virus transgenic mice. Cancer Research 50:3400-3407, 1990.

106. Mondelli, M.U., Chisari, F.V., and Ferrari, C. The cellular immune response to nucleocapsid antigens in hepatitis B virus infection. Springer Semin. Immunopathol. 12:25-31, 1990.

107. Mondelli, M.U., Baldick, J., McLachlan, A., Chisari, F.V., and Moss, B. Expression of HBV envelope and nucleocapsid proteins in human cells using vaccinia virus vectors. Ital. J. Gastroenterol. 22:115-117, 1990.

108. Teeter, L.D., Becker, F.F., Chisari, F.V., Li, D., and Kuo, M.T. Overexpression of the multidrug resistance gene *mdr3* in spontaneous and chemically induced mouse hepatocellular carcinomas. Mol. Cell. Biol. 10:5728-5735, 1990.

109. Furmanski, P., Chisari, F.V., Pellicer, A., Fausto, N., and Padarathsingh, M. Molecular genetic approaches to the analysis of malignant transformation. Cancer Res. 50: 3805-3806, 1990.

110. Chisari, F.V. Analysis of hepadnavirus gene expression, biology and pathogenesis in the transgenic mouse. Curr. Top. Microbiol. Immunol. 168:85-101, 1991.

111. Sell, S., Hunt, J.M., Dunsford, H.A. and Chisari, F.V. Synergy between hepatitis B virus expression and chemical hepatocarcinogens in transgenic mice. Cancer Res. 51:1278-1285, 1991.

112. Moriyama, T., Guilhot, S., Moss, B., Pinkert, C.A., Palmiter, R.D., Brinster, R.L., Klopchin, K., Kanagawa, 0., and Chisari, F.V. Hepatitis B surface antigen-specific antibody and T cell-mediated hepatocellular injury in hepatitis B virus transgenic mice. In: Viral Hepatitis and Liver Disease. Hollinger, F. B., Lemon, S.M. & Margolis, H.S. eds. Williams & Wilkins, Baltimore, MD, pp. 282-288, 1991.

113. Ferrari, C., Bertoletti, A., Penna, A., Cavalli, A., Valli, A., Missale, G., Pilli, M., Fowler, P., Giuberti, T., Chisari, F.V., and Fiaccadori, F. Identification of immunodominant T cell epitopes of the hepatitis B virus nucleocapsid antigen. J. Clin. Invest. 88:214-222, 1991.

114. Peters, M., Vierling, J., Gershwin, M.E., Milich, D., Chisari, F.V. and Hoofnagle, J.H. Immunology and the liver. Hepatology 13:977-994, 1991.

115. Chisari, F.V. Multistage hepatocarcinogenesis in hepatitis B virus transgenic mice. In, Origins of Human Cancer: A Comprehensive Review. Cold Spring Harbor Laboratory Press, New York, pp. 727-738, 1991.

116. Bertoletti, A., Ferrari, C., Fiaccadori, F., Penna, A., Margolskee, R., Schlicht, H.J., Fowler, P., Guilhot, S. and Chisari, F.V. HLA class I restricted human cytotoxic T cells recognize endogenously synthesized hepatitis B virus nucleocapsid antigen. Proc. Natl. Acad. Sci. USA 88:10445-10449, 1991.

117. Penna, A., Chisari, F.V., Bertoletti, A., Missale, G., Fowler, P., Giuberti, T., Fiaccadori, F. and Ferrari, C. Cytotoxic T lymphocytes recognize an HLA-A2 restricted epitope within the hepatitis B virus nucleocapsid antigen.. J. Exp. Med. 174:1565-1570, 1991.

118. Penna, A., Fowler, P., Bertoletti, A., Moss, B., Guilhot, S., Margolskee, M., Cavalli, T., Valli, A., Fiaccadori, F., Chisari, F.V., and Ferrari, C. Hepatitis B virus (HBV)-specific cytotoxic T-cell (CTL) response in humans: Characterization of HLA class II-restricted CTLs that recognize endogenously synthesized HBV envelope antigens. J. Virol. 66:1193-1198, 1992.

119. Chisari, F.V. Hepatitis B virus biology and pathogenesis. In, Molecular Genetic Medicine, Vol. 2 (Friedmann, T., ed.), Academic Press, San Diego, CA, pp. 67-104, 1992.

120. Guilhot, S., Fowler, P., Portillo, G., Margolskee, R.F., Ferrari, C., Bertoletti, A. and Chisari, F.V. Hepatitis B virus (HBV) specific cytolytic T cell response in humans: Production of target cells by stable expression of HBV-encoded proteins in immortalized human B cell lines. J. Virol. 66:2670-2678, 1992.

121. Pasquinelli, C., Bhavani, K. and Chisari, F.V. Multiple oncogenes and tumor suppressor genes are structurally and functionally intact during hepatocarcinogenesis in hepatitis B virus transgenic mice. Cancer Res. 52:2823-2829, 1992.

122. Schirmacher, P., Held, W.A., Chisari, F.V., Yang, D. and Rogler, C.E. Reactivation of insulin-like growth factor II during hepatocarcinogenesis in transgenic mice suggests a role in malignant growth. Cancer Res. 52:2549-2556, 1992.

123. Kuo, M.T., Zou, J.-Y., Teeter, L.D., Ikeguchi, M., and Chisari, F.V. Activation of multidrug resistance (P-glycoprotein) mdr3/mdr1a gene during the development of hepatocellular carcinoma in hepatitis B virus transgenic mice. Cell Growth and Differentiation 3:531-540, 1992.

124. Gilles, P.N., Fey, G. and Chisari, F.V. Tumor necrosis factor-alpha negatively regulates hepatitis B virus gene expression in transgenic mice. J. Virol. 66:3955-3960, 1992.

125. Gilles, P.N., Guerrette, D.L., Ulevitch, R.J., Schreiber, R.D. and Chisari, F.V. Hepatitis B surface antigen retention sensitizes the hepatocyte to injury by physiologic concentrations of gamma interferon. Hepatology 16:655-663, 1992.

126. Rogler, C.E. and Chisari, F.V. Cellular and molecular mechanisms of hepatocarcinogenesis. In: Seminars in Liver Disease (D. Shafritz, ed.), Thieme Medical Publishers, N.Y. 12:265-278, 1992.

127. Missale, G., Redeker, A., Person, J., Fowler, P., Guilhot, S., Schlicht, H.J., Ferrari, C. and Chisari, F.V. HLA-A31 & HLA-Aw68 restricted cytotoxic T cell responses to a single hepatitis B virus nucleocapsid epitope during acute viral hepatitis. J. Exp. Med. 177:751-762, 1993.

128. Bertoletti, A., Chisari, F.V., Penna, A., Guilhot, S., Galati, L., Missale, G., Fowler, P., Schlicht, H-J., Vitiello, A., Chesnut, R.C., Fiaccadori, F. and Ferrari, C. Definition of a minimal optimal cytotoxic T cell epitope within the hepatitis B virus nucleocapsid protein. J. Virol. 67:2376-2380, 1993.

129. Lee, S., Mao, L., Mazzoni, G., Gittes, R.F., Chung, D.Y., Brems, J., Takiff, H. and Chisari, F.V. A technique for mouse-rat liver xenograft. In: Experimental Microsurgery Proceedings. 1st International Congress of the International Society for Experimental Microsurgery (S. Lee, G. Mazzoni, G. Rodolico Eds.) Cianamid Italia Publishers, pp. 112-119, 1993.

130. Nayersina, R., Fowler, P., Guilhot, S., Missale, G., Cerny, A., Schlicht, H-J., Vitiello, A., Chesnut, R., Person, J.L., Redeker, A.G. and Chisari, F.V. HLA A2 restricted cytotoxic T lymphocyte responses to multiple hepatitis B surface antigen epitopes during hepatitis B virus infection. J. Immunol. 150:4659-4671, 1993.

131. Chisari, F.V. The role of cytotoxic T lymphocytes and inflammatory cytokines in the pathogenesis of acute viral hepatitis. Gastroenterol. Jpn. 28:2-6, 1993.

132. Missale, G., Brems, J.J., Takiff, H., Pockros, P.J. and Chisari, F.V. Human leukocyte antigen class I-independent pathways may contribute to hepatitis B virus-induced liver disease after liver transplantation. Hepatol. 18:491-496, 1993.

133. Ferrari, C., F. Fiaccadori and Chisari, F.V. Cellular immune reactions to hepatitis B core antigen. In: Immunology and Liver (L.-H. zum Büschenfelde, J. Hoofnagle and M. Manns, Eds.), Kluwer Academic Publishers, pp. 39-47, 1993.

134. Ando, K., Moriyama, T., Guidotti, L.G., Wirth, S., Schreiber, R.D., Schlicht, H.J., Huang, S., and Chisari, F.V. Mechanisms of class I restricted immunopathology. A transgenic mouse model of fulminant hepatitis. J. Exp. Med. 178:1541-1554, 1993.

135. Guilhot, S., Guidotti, L.G. and Chisari, F.V. Interleukin-2 downregulates hepatitis B virus gene expression in transgenic mice by a post-transcriptional mechanism. J. Virol. 67:7444-7449, 1993.

136. Fiaccadori, F., Ferrari, C. and Chisari, F.V. Role of the T cell response to hepatitis B virus (HBV) nucleocapsid antigen in the pathogenesis of HBV infection. In: Liver Cirrhosis and Viral Hepatitis (P. Gentilini and M.U. Dianzani, Eds.) Elsevier Science B.V., 1993.

137. Michalak, T.I., Pasquinelli, C., Guilhot, S., and Chisari, F.V. Hepatitis B virus persistence after recovery from acute viral hepatitis. J. Clin. Invest. 93:230-239, 1994.

138. Guidotti, L.G., Guilhot, S. and Chisari, F.V. Interleukin 2 and interferon alpha/beta down-regulate hepatitis B virus gene expression in vivo by tumor necrosis factor dependent and independent pathways. J. Virol. 68:1265-1270, 1994.

139. Ando, K., Guidotti, L.G., Wirth, S., Ishikawa, T., Missale, G., Moriyama, T. , Schreiber, R.D., Schlicht, H.J., Huang, S. and Chisari, F.V. Class I restricted cytotoxic T lymphocytes are directly cytopathic for their target cells in vivo. J. Immunol. 152:3245-3253, 1994.

140. Guilhot, S., Huang, S., Xia, Y.P., LaMonica, N., Lai, M.M.C. and Chisari, F.V. Expression of the hepatitis delta virus large and small antigens in transgenic mice. J. Virol. 68:1052-1058, 1994.

141. Guidotti, L.G., Ando, K., Hobbs, M.V., Ishikawa, T., Runkel, L., Schreiber R.D., and Chisari, F.V. Cytotoxic T lymphocytes inhibit hepatitis B virus gene expression by a noncytolytic mechanism in transgenic mice. Proc. Nat'l Acad. Sci., USA 91:3764-3768, 1994.

142. Bertoletti, A., Sette, A., Chisari, F.V., Penna, A., Levrero, M., De Carli, M., Fiaccadori F., and Ferrari, C. Natural variants of cytotoxic epitopes are T cell receptor antagonists for antiviral cytotoxic T cells. Nature 369:407-410, 1994.

143. Ando, K., Guidotti, L.G., Cerny, A., Ishikawa, T. and Chisari, F.V. CTL access to tissue antigen is restricted in vivo. J. Immunol. 153:482-488, 1994.

144. Cerny, A., Ferrari, C. and Chisari, F.V. The class I restricted cytotoxic T lymphocyte response to predetermined epitopes in the hepatitis B and C viruses. IN: Current Topics in Microbiology and Immunology, Vol. 189, (M.B.A. Oldstone, ed.) Springer-Verlag, Heidelberg pp. 169-186, 1994.

145. Ferrari, C. and Chisari, F.V. Immune mechanisms of cellular injury in viral hepatitis. In: The Liver: Biology and Pathobiology, 3rd Edition (I.M. Arias, J.L. Boyer, N. Fausto, W.B. Jakoby, D. Schachter and D.A. Shafritz, Eds.) Raven Press, New York, N.Y. pp. 1413-1427, 1994.

146. Fowler, P., Nayersina, R., Missale, G., Bertoletti, A., Penna, A., Ando, K., Cerny, A., Fiaccadori, F., Ferrari, C., and Chisari, F.V. The role of the cytotoxic T lymphocyte response

in hepatitis B virus immunobiology and pathogenesis. *In*: Viral Hepatitis and Liver Disease, (K. Nishioka, H. Suzuki, S. Mishiro and T. Oda, Eds.), Springer-Verlag Tokyo. pp. 173-177, 1994.

147. Cerny, A., McHutchison, J.G., Pasquinelli, C., Brothers, M.A., Fowler, P., Houghton, M. and Chisari, F.V. Hepatitis C virus specific cytotoxic T lymphocytes restricted by HLA-A2 are present in the peripheral blood of patients with chronic hepatitis C. *In*: Viral Hepatitis and Liver Disease, (K. Nishioka, H. Suzuki, S. Mishiro and T. Oda, Eds.), Springer-Verlag Tokyo. pp. 190-194, 1994.

148. Guidotti, L.G., Martinez, V., Loh, Y.T., Rogler, C.E. and Chisari, F.V. Hepatitis B virus nucleocapsid particles do not cross the hepatocyte nuclear membrane in transgenic mice. J. Virology 68:5469-5475, 1994.

149. Bertoletti, A., Costanzo, A., Chisari, F.V., Levrero, M., Artini, M., Sette, A., Penna, A., Giuberti, T., Fiaccadori, F. and Ferrari, C. Cytotoxic T lymphocyte response to a wild type hepatitis B virus epitope in patients chronically infected by variant viruses carrying substitutions within the epitope. J. Exp. Med. 180:933-943, 1994.

150. Tsuji, T. and Chisari, F.V. Cellular immune responses to hepatitis viruses: Summary of a Specialty Session. In: Viral Hepatitis and Liver Disease, (K. Nishioka, H. Suzuki, S. Mishiro and T. Oda, Eds.), Springer-Verlag Tokyo. pp. 153-154, 1994.

151. Cerny, A. and Chisari, F.V. Immunological aspects of HCV infection. In: Intervirology. Recent Advances in the Study of Hepatitis C. Virus, (O. Hino, ed.) S. Karger, Basel pp. 119-125, 1994.

152. Chisari, F.V. The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus in man and the transgenic mouse. Proceedings of Viral Hepatitis. The 20th Anniversary of Ausria Symposium. (I.K. Mushahwar, ed.) Abbott Diagnostics, Abbott Park, IL pp. 29-36, 1994.

153. Huang, J-H, Getty, R.R., Chisari, F.V., Fowler, P., Greenspan, N.S. and Tykocinski, M.L. Protein transfer of preformed MHC-peptide complexes sensitizes target cells to T cell cytolysis. Immunity 1:607-613, 1994.

154. Toshkov, I., Chisari, F.V. and Bannasch, P. Hepatic preneoplasia in hepatitis B virus transgenic mice. Hepatology 20:1162-1172, 1994.

155. Pasquinelli, C., Bhavani, K., Schirmacher, P., Rogler, C., and Chisari, F.V. Expression of hepatocyte mitogens and mitogen receptors during hepatocarcinogenesis in hepatitis B virus transgenic mice. Transgenics 1:451-457, 1994.

156. Hagen, T.M., Huang, S-N., Curnutte, J., Fowler, P., Martinez, V., Wehr, C., Ames, B.N. and Chisari, F.V. Extensive oxidative DNA damage in hepatocytes of transgenic mice with

chronic active hepatitis destined to develop hepatocellular carcinoma. Proc. Nat'l Acad. Science, USA 91:12808-12812, 1994.

157. Kirby, G.M., Chemin, I., Montesano, R., Chisari, F.V., Lang, M.A. and Wild, C.P. Induction of specific cytochrome P450s involved in aflatoxin B_1 metabolism in hepatitis B virus transgenic mice. Molec. Carcinog. 11:74-80, 1994.

158. Sette, A., Vitiello, A., Rehermann, B., Fowler, P., Nayersina, R., Kast, W.M., Melief, C.J.M., Oseroff, C., Yuan, L., Ruppert, J., Sidney, J., del Guercio, M-F, Southwood, S., Kubo R.T., Chesnut, R.W., Grey, H.M. and Chisari, F.V. The relationship between class I binding affinity and immunogenicity of potential cytotoxic T cell epitopes. J. Immunol. 153:5586-5592, 1994.

159. Cerny, A., McHutchison, J.G., Pasquinelli, C., Brown, M.E., Brothers, M.A., Grabscheid, B., Fowler, P., Houghton, M. and Chisari, F.V. Cytotoxic T lymphocyte response to hepatitis C virus-derived peptides containing the HLA A2.1 binding motif. J. Clin. Invest. 95:521-530, 1995.

160. Vitiello, A., Ishioka, G., Grey, H.M., Rose, R., Farness, P., LaFond, R., Yuan, L., Chisari, F.V., Furze, J., Bartholomeuz, R. and Chesnut, R.W. Development of a lipopeptide-based therapeutic vaccine to treat chronic HBV infection. J. Clin. Invest. 95:341-349, 1995.

161. Wirth, S., Guidotti, L.G., Ando, K., Schlicht, H.J. and Chisari, F.V. Breaking tolerance leads to autoantibody production but not autoimmune liver disease in HBV envelope transgenic mice. J. Immunol. 154:2504-2515, 1995.

162. Huang, S.N. and Chisari, F.V. Strong, sustained hepatocellular proliferation precedes hepatocarcinogenesis in hepatitis B surface antigen transgenic mice. Hepatology 21:620-626, 1995.

163. Cerny, A., Fowler, P., Brothers, M.A., Houghton, M., Schlicht, H.J. and Chisari, F.V. Induction in vitro of a primary human antiviral cytotoxic T cell response. Eur. J. Immunol. 25:627-630, 1995.

164. Rehermann, B., Fowler, P., Sidney, J., Person, J., Redeker, A., Brown, M., Moss, B., Sette, A. and Chisari, F.V. The cytotoxic T lymphocyte response to multiple hepatitis B virus polymerase epitopes during and after acute viral hepatitis. J. Exp. Med. 181:1047-1058, 1995.

165. Chisari, F.V. and Ferrari, C. Hepatitis B virus immunopathogenesis. In: Ann. Rev. of Immunology, (W.E. Paul, ed.) Ann. Reviews, Inc., Palo Alto, CA 13:29-60, 1995.

166. Guidotti, L.G., Matzke, B., Schaller, H. and Chisari, F.V. High-level hepatitis B virus replication in transgenic mice. J. Virol. 69:6158-6169, 1995.

167. Rehermann, B., Pasquinelli, C., Mosier, S.M. and Chisari, F.V. Hepatitis B virus (HBV) sequence variation in cytotoxic T lymphocyte epitopes is not common in patients with chronic HBV infection. J. Clin. Invest. 96:1527-1534, 1995.

168. Franco, A., Ferrari, C., Sette, A. and Chisari, F.V. Viral mutations, TCR antagonism and escape from the immune response. In: Current Opinion in Immunology (A. Sher and R. Ahmed, eds.), Current Biology, Ltd., London, U.K. Vol. 7, pp. 524-531, 1995.

169. Schirmbeck, R., Böhm, W., Ando, K., Chisari, F.V. and Reimann, J. Nucleic acid vaccination primes hepatitis B surface antigen specific cytotoxic T lymphocytes in nonresponder mice. J. Virol. 69:5929-5934, 1995.

170. Chisari, F.V. Hepatitis B virus transgenic mice: Insights into the virus and the disease. Hepatology 22:1316-1325, 1995.

171. Chisari, F.V. and Ferrari, C. Hepatitis B virus immunopathology. Springer Seminars in Immunopathology, 17:261-281, 1995.

172. Tsui, L.V., Guidotti, L.G., Ishikawa, T. and Chisari, F.V. Post-transcriptional clearance of hepatitis B virus RNA by cytotoxic T lymphocyte-activated hepatocytes. Proc. Nat'l Acad. Sci., USA 92:12398-12402, 1995.

173. Lanford, R.E., Chavez, D., Chisari, F.V. and Sureau, C. Lack of detection of negative strand hepatitis C virus RNA in peripheral blood mononuclear cells and other extrahepatic tissues by the highly strand specific rTth reverse transcriptase PCR. J. Virol. 69:8079-8083, 1995.

174. Wentworth, P.A., Celis, E., Crimi, C., Stitely, S., Hale, L., Tsai, V., Serra, H.M., del Guercio, M-F., Livingston, B., Alazard, D., Fikes, J., Kubo, R.T., Grey, H.M., Chesnut, R.W., Chisari, F.V. and Sette, A. In vitro induction of primary, antigen-specific CTL from human peripheral blood mononuclear cells stimulated with synthetic peptides. Molec. Immunol. 32:602-612, 1995.

175. Chisari, F.V. Hepatitis B virus transgenic mice: Models of viral immunobiology and pathogenesis. In: Current Topics in Microbiology and Immunology (F.V. Chisari & M.B.A. Oldstone, eds.) Springer-Verlag, Heidelberg 206:149-173, 1995.

176. Chisari, F.V. Intracellular inactivation of the hepatitis B virus by the immune response. In: Vaccines, One Hundred Years After Louis Pasteur (M. Girard, ed.) Institut Pasteur, Paris, France, pp.187-190, 1995.

177. Guidotti, L.G., Ishikawa, T., Hobbs, M.V., Matzke, B., Schreiber, R. and Chisari, F.V. Intracellular inactivation of the hepatitis B virus by cytotoxic T lymphocytes. Immunity 4:25-36, 1996.

178. Fernandes, C.L., Chavan, S.J., Dong, J-H., Bornmann, W.G., Polsky, B., Chisari, F.V., Montali, J.A., Schmidt, Jr., D.E. and Prochaska, H.J. Regulation of glutathione S-transferases: Clues from a worm, a virus and a mouse with hepatitis. In: Glutathione S-

transferases: Structure, Function & Clinical Implications (Vermuelen, N., Mulder, G., Nieuwenhuyse, H., Peters, W., van Bladeren, P., eds.), Taylor & Francis, London, pp. 97-109, 1996.

179. Rehermann, B., Lau, D., Hoofnagle J.H. and Chisari, F.V. Cytotoxic T lymphocyte responsiveness following resolution of chronic hepatitis B virus infection. J. Clin. Invest. 97:1655-1665, 1996.

180. Guidotti, L.G., Borrow, P., Hobbs, M.V., Matzke, B., Gresser, I., Oldstone, M.B.A. and Chisari, F.V. Viral cross talk: Intracellular inactivation of the hepatitis B virus during an unrelated viral infection of the liver. Proc. Nat'l Acad. Sci, USA 93:4589-4594, 1996.

181. Ferrari, C., Bertoletti, A., Fiaccadori, F. and Chisari, F.V. Is antigenic variability a strategy adopted by hepatitis B virus to escape cytotoxic T lymphocyte surveillance? Seminars in Virology, 7:23-30, 1996.

182. Kuhröber, A., Pudollek, H-P., Reifenberg, K., Chisari, F.V., Schlicht, H-J., Reimann, J. and Schirmbeck, R. DNA immunization induces antibody and cytotoxic T cell responses to hepatitis B core antigen in H-2^b mice. J. Immunol. 156:3687-3695, 1996.

183. Guidotti, L.G. and Chisari, F.V. The Transgenic mouse model of hepatitis B virus infection. In: FORUM, Trends in Experimental and Clinical Medicine (L. Frati & L. Santi, Eds.), Scuola Superiore di Oncologia E Scienze Biomediche, Genova, Italy. 6:189-200, 1996.

184. Wentworth, P.A., Sette, A., Celis, E., Sidney, J., Southwood, S., Crimi, C., Stitely, S., Keogh, E., Wong, N.C., Livingston, B., Alazard, D., Vitiello, A., Grey, H.M., Chisari, F.V., Chesnut R.W., and Fikes, J. Identification of A2-restricted hepatitis C virus-specific cytotoxic T lymphocyte epitopes from conserved regions of the viral genome. Int'l. Immunology 8:651-659, 1996.

185. Guidotti, L.G. and Chisari, F.V. To kill or to cure: Options in host defense against viral infection. In: Current Opinion in Immunology (R. Zinkernagel and B. Bloom, eds.), Current Biology, Ltd., London, U.K. 8:478-483, 1996.

186. Chemin, I., Takahashi, S., Belloc, C., Lang, M.A., Ando, K., Guidotti, L.G., Chisari, F.V. and Wild, C.P. Differential induction of carcinogen metabolizing enzymes in a transgenic mouse model of fulminant hepatitis. Hepatology 24:649-656, 1996.

187. Penna, A., Artini, M., Cavalli, A., Levrero, M., Bertoletti, A., Pilli, M., Chisari, F.V., Rehermann, B., Prete, G.D., Fiaccadori, F., Ferrari, C. Long-lasting memory T cell responses following self-limited acute hepatitis B. J. Clin. Invest. 98: 1185-1194, 1996.

188. Guidotti, L.G., Matzke, B., Pasquinelli, C., Shoenberger, J.M., Rogler, C.E. and Chisari, F.V. The hepatitis B virus precore protein inhibits HBV replication in transgenic mice. J. Virol. 70:7056-7061, 1996.

189. Rehermann, B., Chang, K-M., McHutchison, J., Kokka, R., Houghton, M., Rice, C.M. and Chisari, F.V. Differential cytotoxic T lymphocyte responsiveness to the hepatitis B and C viruses in chronically infected patients. J. Virol. 70:7092-7102, 1996.

190. Rehermann, B., Chang, K-M., McHutchison, J.G., Kokka, R., Houghton M., and Chisari, F.V. Quantitative analysis of the peripheral blood cytotoxic T lymphocyte response, disease activity and viral load in patients with chronic hepatitis C virus infection. J. Clin. Invest. 98:1432-1440, 1996.

191. Rehermann, B., Ferrari, C., Pasquinelli C., and Chisari, F.V. The hepatitis B virus persists for decades after recovery from acute viral hepatitis despite active maintenance of a cytotoxic T lymphocyte response. Nature Medicine 2:1104-1108, 1996.

192. Chisari, F.V. and Ferrari, C. Viral hepatitis. In: Viral Pathogenesis (N. Nathenson, R. Ahmed, F. Gonzalez-Scarano, D. Griffin, K. Holmes, F.A. Murphy and H.L. Robinson, eds.) Lippincott-Raven Publishers, Philadelphia, PA. pp. 745-778, 1996.

193. Fernandes, C.L., Dong, J-H., Roebuck, B.D., Chisari, F.V., Montali, J.A., Schmidt, Jr., D.E. and Prochaska, H.J. Elevations of hepatic quinone reductase, glutathione, and α- and μ-class glutathione S-transferase isoforms in mice with chronic active hepatitis: A compensatory response to injury. Arch. Biochem. & Biophys. 331:104-116, 1996.

194. Rehermann, B. and Chisari, F.V. Hepatitis B virus immunopathology - experimental and clinical features. In: Viral Hepatitis (R.A. Willson, ed.), Marcel Dekker, Inc., New York, N.Y. pp.85-117, 1997.

195. Cavanaugh, V.J., Guidotti, L.G., Hobbs, M.V., Gresser, I., Schreiber, R., Chisari, F.V. Interleukin-12 inhibits hepatitis B virus replication in HBV transgenic mice. J. Virol. 71:3236-3243, 1997.

196. Pasquinelli, C., Shoenberger, J., Chung, J., Chang, K-M., Guidotti, L.G., Selby, M., Berger, K., Lesniewski, R., Houghton M., and Chisari, F.V. Hepatitis C virus core and E2 protein expression in transgenic mice. Hepatology 25:719-727, 1997.

197. Chisari, F.V. Cytotoxic T Cells and Viral Hepatitis. J.Clin.Invest.99:1472-1477, 1997.

198. Guidotti, L.G., Matzke, B., Chisari, F.V. HBV replication is cell cycle independent during liver regeneration in transgenic mice. J. Virol. 71:4804-4808, 1997.

199. Kaplanski, C., Chisari, F.V. and Wild, C.P. Minisatellite rearrangements are increased in liver tumours induced by transplacentally aflatoxin B_1 treatment of hepatitis B virus transgenic mice but not in spontaneously arising tumours. Carcinogenesis 18:633-639, 1997.

200. Nakamoto, Y., Guidotti, L.G., Pasquetto, V., Schreiber, R.D., Chisari, F.V. Differential target cell sensitivity to cytotoxic T lymphocyte-activated death pathways in hepatitis B virus in transgenic mice. J. Immunol. 158:5692-5697, 1997.

201. Chang, K-M., Rehermann, B., Chisari, F.V. Immunopathology of hepatitis C. In: Springer Seminars in Immunopathology (V. Agnello, ed.) Springer-Verlag, Heidelberg, Germany, 19:57-68, 1997.

202. Livingston, B.D., Crimi, C., Grey, H., Ishioka, G., Chisari, F.V., Fikes, J., Grey, H., Chesnut, R.W., Sette, A. The hepatitis B virus-specific CTL responses induced in humans by lipopeptide vaccination are comparable to those elicited by acute viral infection. J. Immunol. 159:1383-1392, 1997.

203. Bertoni, R., Sidney, J., Fowler, P., Chisari, F.V., Sette, A. Human histocompatibility leukocyte antigen-binding supermotifs predict broadly cross-reactive cytotoxic T lymphocyte responses in patients with acute hepatitis. J. Clin. Invest. 100:503-513, 1997.

204. Franco, A., Guidotti, L.G., Hobbs, M.V., Pasquetto, V., Chisari, F.V. Pathogenetic effector function of CD4-positive T-helper 1 cells in hepatitis B virus transgenic mice. J. Immunol. 159:2001-2008, 1997.

205. Kuhröber, A., Wild, J., Pudollek, H-P., Chisari, F.V., Reimann, J. DNA vaccination with plasmids encoding the intracellular (HBcAg) or secreted (HBeAg) form of the core protein of hepatitis B virus primes T cell responses to two overlapping K^b- and K^d- restricted epitopes. International Immunology 9:1203-1212, 1997.

206. Jakubczak, J.L., Chisari, F.V., Merlino, G. Synergy between transforming growth factor α and hepatitis B virus surface antigen in hepatocellular proliferation and carcinogenesis. Cancer Research 57:3606-3611, 1997.

207. Chisari, F.V. Immunobiology and pathogenesis of viral hepatitis. In: Proceedings of the IX Triennial International Symposium on Viral Hepatitis and Liver Disease (M. Rizzetto, R.H. Purcell, J.L. Gerin, G. Verme, eds.). Turin, Itlay, pp.405-415, 1997.

208. Chang, K-M., Rehermann, B., McHutchison, J.G., Pasquinelli, C., Southwood, S., Sette, A., Chisari, F.V. Immunological significance of cytotoxic T lymphocyte epitope variants in patients chronically infected by the hepatitis C virus. J. Clin. Invest. 100:2376-2385, 1997.

209. Alexander, J., Oseroff, C., Sidney, J., Wentworth, P., Keogh, E., Hermanson, G., Chisari, F.V., Kubo, R.T., Grey, H.M., Sette, A. Derivation of HLA-A11/K^b transgenic mice: Functional CTL repertoire and recognition of human A11-restricted CTL epitopes. J. Immunol. 159:4753-4761, 1997.

210. Hu, J-F., Cheng, Z., Chisari, F.V., Vu, T.H., Hoffman, A.R. and Campbell, T.C. Repression of hepatitis B virus transgene and HBV-induced liver injury by low protein diet. Oncogene 15:2795-2801, 1997.

211. Chisari, F.V. Hepatitis B virus pathogenesis: what have we learned from the transgenic mouse? In: Therapy in Liver Diseases. The pathophysiological basis of therapy. (V. Arroyo,

Bosh, J., Bruguera, M., Rodes, J. eds.). Masson-Little, Brown & Co., Barcelona, Spain, pp. 119-126, 1997.

212. Cavanaugh, V.J., Guidotti, L.G., Chisari, F.V. Inhibition of hepatitis B virus replication during adenovirus and cytomegalovirus infections in HBV transgenic mice. J. Virol 72:2630-2637, 1998.

213. Nakamoto, Y., Guidotti, L.G., Kuhlen, C., Fowler, P., and Chisari, F.V. Immune pathogenesis of hepatocellular carcinoma. J. Exp. Med. 188:341-350, 1998.

214. Lemon, S.M., Chisari, F.V., Lai, M.M.C., Nishioka, K., Mishiro, S., Johnson, L. The Ninteenth United States-Japan Joint Hepatitis Panel Meeting. Hepatol. 28:881-887, 1998.

215. Shimizu, Y., Guidotti, L.G., and Chisari, F.V. Dendritic cell immunization breaks cytotoxic T lymphocyte tolerance in hepatitis B virus transgenic mice. J. Immunol. 161:4520-4529, 1998.

216. Bertoni, R., Sette, A., Sidney, J., Guidotti, L.G., Shapiro, M., Purcell, R., and Chisari, F.V. Human class I supertypes and cytotoxic T lymphocyte repertoires extend to chimpanzees. J. Immunol. 161:4447-4455, 1998.

217. Alexander, J., Del Guercio, M-F., Fikes, J.D., Chesnut, R.W., Chisari, F.V., Chang, K-M., Appella, E., and Sette, A. Recognition of a novel naturally processed, A2 restricted, HCV-NS4 epitope triggers IFN-gamma release in absence of detectable cytopathicity. Hum. Immunol. 59:776-782, 1998.

218. Ishikawa, T., Kono, D., Chung, J., Fowler, P., Theofilopoulos, A., Kakumu, S., and Chisari, F.V. Polyclonality and multispecificity of the cytotoxic T lymphocyte response to a single viral epitope. J. Immunol. 161:5842-5850, 1998.

219. Rehermann, B. and Chisari, F.V. The immunology of chronic hepatitis B virus. In: Hepatitis B virus: Molecular mechanisms in disease and novel strategies for therapy (R. Koshy and W. Caselmann, eds.), World Scientific Publishing Co. Inc., River Edge, Hong Kong pp. 111-132, 1998.

220. Alexander, J., Fikes, J., Hoffman, S., Appella, E., Chisari, F.V., Guidotti, L.G., Chesnut, R., Livingston, B.,and Sette, A. The optimization of helper T lymphocyte (HTL) function in vaccine development. Immunol. Res. 18:79-92, 1998.

221. Chisari, F.V. The immunobiology of viral hepatitis. In: T Cells in the Liver: Biology, Immunopathology and Host Defense (N. Crispe, ed). John Wiley and Sons, New York, NY, pp. 117-138, 1999.

222. Heise, T., Guidotti, L.G., Cavanaugh, V. and Chisari, F.V. Hepatitis B virus RNA-binding proteins associated with cytokine-induced clearance of viral RNA from the liver of transgenic mice. J. Virol. 73:474-481, 1999.

223. Chang, K-M., Gruner, N., Southwood, S., Pape, G., Chisari, F.V., Sette, A. Identification of HLA-A3 and –B7 restricted cytotoxic T lymphocyte response to hepatitis C virus in patients with acute and chronic hepatitis C. J. Immunol. 162:1156-1164, 1999.

224. Chisari, F.V. and Lai, M.M.C. Hepatitis B and Delta Virus Pathogenesis. In: Persistent Viral Infections. (R. Ahmed and I. Chen, eds.) John Wiley & Sons, Ltd., West Sussex, England, pp. 77-92, 1999.

225. Schultz, U., Chisari, F.V. Recombinant duck interferon gamma inhibits duck hepatitis B virus replication in primary hepatocytes. J. Virol. 73:3162-3168, 1999.

226. Livingston, B.D., Alexander, J., Crimi, C., Oseroff, C., Vadi, R., Celis, E., Daly, K., Guidotti, L.G., Chisari, F.V., Fikes, J., Chesnut, R.W., and Sette, A. Altered helper T lymphocyte (HTL) function associated with chronic HBV infection and its role in response to therapeutic vaccination in humans. J. Immunol. 162:3088-3095, 1999.

227. Chemin, I., Ohgaki, H., Chisari, F.V., Wild, C.P. Altered expression of hepatic carcinogen metabolizing enzymes with liver injury in HBV transgenic mouse lineages expressing various amounts of hepatitis B surface antigen. Liver 19:81-87, 1999.

228. Sette, A., Alexander, J., Appella, E., Celis, E., Chisari, F.V., Kubo, R., Livingston, B., Sakeguchi, K., Sidney, J., Vitiello, A., Wentworth, P., Grey, H., and Chesnut, R. The use of synthetic peptides to characterize CTL responses in acute and chronic viral diseases. In: Persistent Viral Infections (R. Ahmed and I. Chen, eds). John Wiley and Sons, Ltd., West Sussex, England, p. 677-689, 1999.

229. Guidotti, L.G., Rochford, R., Chung, J., Shapiro, M., Purcell, R. and Chisari, F.V. Viral clearance without destruction of infected cells during acute HBV infection. Science 284:825-829, 1999.

230. Chang, K-M., Chisari, F.V. Immunopathogenesis of Hepatitis B Virus. In: Clinics in Liver Disease (W.M. Lee, ed.). W.B. Saunders, Philadelphia, PA, vol. 3, no. 2, pp. 221-240, 1999.

231. Guidotti, L.G., Borrow, P., Brown, A., McClary, H., Koch, R., Chisari, F.V. Noncytopathic clearance of lymphocytic choriomeningitis virus from the hepatocyte. J. Exp. Med. 189:1555-1564, 1999.

232. Heise, T., Guidotti, L.G. and Chisari, F.V. La autoantigen specifically recognizes a predicted stem-loop in hepatitis B virus RNA. J. Virol. 73:5767-5776, 1999.

233. Schultz, U., Summers, J., Staeheli, P., Chisari, F.V. Elimination of DHBV RNA-containing capsids in duck interferon-α-treated hepatocytes. J. Virol. 73:5459-5465, 1999.

234. Cerny, A., Chisari, F.V. Pathogenesis of chronic hepatitis C: immunological features of hepatic injury and viral persistence. Hepatology 30:595-601, 1999.

235. Guidotti, L.G, Chisari, F.V. Cytokine induced viral purging- role in viral pathogenesis. Curr. Opin. In Microbiol. 2:388-391, 1999.

236. Reifenberg, K., Wilts, H., Löhler, J., Nusser, P., Hanano, R., Barsig, J., Guidotti, L.G., Chisari, F.V., Schlicht, H-J. The hepatitis B virus X-protein transactivated viral core gene expression *in vivo*. J. Virol. 73: 10399-10405, 1999.

237. Rehermann, B., and Chisari, F.V. Cell mediated immune response to the hepatitis C virus. In: Current Topics in Microbiology and Immunology: Hepatitis C Virus (C. Hagedorn, C.M. Rice, eds). Springer-Verlag, Heidelberg, Germany, pp. 299-325, 1999.

238. Lauvau, G., Kakimi, K., Niedermann, G., Ostankovitch, M., Yotnda, P., Chisari, F.V., van Endert, P. Processing of epitope precursor peptides selected by human TAP transporters in the endoplasmic reticulum. J. Exp. Med. 190:1227-40, 1999.

239. McClary, H., Koch, R., Chisari, F.V., Guidotti, L.G. Relative sensitivity of hepatitis B virus and other hepatotropic viruses to the antiviral effects of cytokines. J. Virol. 74:2255-2264, 2000.

240. Chisari, F.V. Rous-Whipple Award LectureViruses, Immunity, and Cancer: Lessons from Hepatitis B. Am. J. Pathol. 159:1117-1131, 2000.

241. Wieland, S.F., Guidotti, L.G., Chisari, F.V. Intrahepatic induction of IFN α/β eliminates viral RNA-containing capsids in HBV transgenic mice. J. Virol. 74:4165-4173, 2000.

242. Schirmbeck, R., Wild, J., Blum, H.E., Chisari, F.V., Geissler, M., Reimann, J. Ongoing murine T1 or T2 immune responses to the hepatitis B surface antigen (HBsAg) are excluded from the liver that expresses transgene-encoded HBsAg. J. Immunol. 164:4235-4243, 2000.

243. Guidotti, L.G., McClary, H., Moorhead, J., Chisari, F.V. Nitric oxide inhibits hepatitis B virus replication in the liver of transgenic mice. J. Exp. Med. 191:1247-1252, 2000.

244. Guidotti, L.G., Chisari, F.V. Cytokine-mediated control of viral infections. *In*: Virology (in press).

245. McClary, H., Koch, R., Chisari, F.V., Guidotti, L.G. Inhibition of hepatitis B virus replication during *Schistosoma Mansoni* infection in transgenic mice. J. Exp. Med. (in press).

246. Pasquetto, V., Guidotti, L.G., Kakimi, K., Koch, R., Tsjui, M., Chisari, F.V. Host-virus interaction during malaria infection in hepatitis B virus transgenic mice. J. Exp. Med. (in press).

247. McKinney, D.M., Erickson, A.L., Walker, C.M., Thimme, R., Chisari, F.V., Purcell, R., Sidney, J., Sette, A. Identification of five different Patr class I moleducles which bind HLA supertype peptides and definition of their peptide binding motifs. J. Immunol. (in press).

248. Nakamoto, Y., Guidotti, L.G. and Chisari, F.V. A two hit model of cytotoxic T lymphocyte killing *in vivo*. (submitted).

249. Grabscheid, B., Brothers, M.A., Pichler, W.J., Chisari, F.V., Reichen J., and Cerny, A. A sensitive assay for the quantitation of human viral epitope specific CTL precursors in the peripheral blood by limiting dilution. (submitted).

250. Chang, K-M., Thimme, R., Melpolder, J., Oldach, D., Pemberton, J., Moorhead-Loudis, J., McHutchison, J.G., Alter, H.J., Chisari, F.V. Differential $CD4^+$ and $CD8^+$ T cell responsiveness in acute and chronic hepatitis C virus infection . (submitted).

251. Voehringer, D., Blaser, C., Busse-Grawitz, A., Chisari, F.V., Buerki, K., Pircher, H. Break of T cell ignorance to a viral antigen in the liver induces hepatitis. (submitted).

252. Ferrari, C., Chisari, F.V. Immune mechanisms of viral clearance and disease pathogenesis during viral hepatitis. *In*: The Liver: Biology and Pathobiology 4th Edition. (I.M. Arias, J. Boyer, F.V. Chisari, N. Fausto, Schachter and D. Shafritz, eds.) Lippincott, Williams & Wilkins, Philadelphia, PA. (submitted).

253. Kakimi, K., Guidotti L., Koezuka, Y., Chisari F.V. Activated natural killer cells inhibit HBV replication in vivo. (submitted).

254. Pasquetto, V., Wieland, S., Chisari, F.V. Intracellular HBV nucleocapsids survive CTL-induced apoptosis of hepatocytes. (submitted).

255. Bukh, J., Thimme, R., Govindarajan, S., Forns, X., Satterfield, W., Eder, G., Chang, K-M., Yanagi, M., Emerson S.U., Chisari, F.V., Purcell, R.H. Monoclonal hepatitis C virus infection in chimpanzees. (submitted).

256. Forns, X., Thimme, R., Govindarajan, S., Emerson, S.U., Purcell, R.H., Chisari, F.V., Bukh, J. Hepatitis C Virus lacking hypervariable region 1 is infectious. (submitted).

257. Thimme, R., Bukh, J., Pemberton, J., Guidotti, L.G., Purcell, R.H., Chisari, F.V. T cell responses and intrahepatic cytokine profiles in HBV- and HCV-infected chimpanzees. (submitted).

258. Guidotti, L.G., Chisari, F.V. Noncytolytic control of viral infections by the innate and adaptive immune response. Annual Review of Immunology 19, 2001. (submitted).

259. Sette, A., Oseroff, C., Sidney, J., Alexander, J., Chesnut, R.W., Kakimi, K., Guidotti, L.G., Chisari, F.V. Overcoming T cell tolerance to the hepatitis virus surface antigen in HBV transgenic mice. (in preparation).

1. Deal, D.R., Gerber, P., Chisari, F.V. and Eddy, B. Heterotransplantability of an in vitro transformed human lymphoblastoid cell line. Proc. Am. Assoc. Cancer Res. 12:23, 1971.

ABSTRACTS

2. Chisari, F.V., Hochstein, H.D., Kirschstein, R.L. and Seligman, E.B. Parathyroid necrosis and hypocalcemic tetany induced in rabbits by L-asparaginase. Yearbook of Endocrinology. Yearbook Medical Publishers, p. 99, 1973.

3. Barker, L.F., Dalgard, D., McGrath, P.P., Chisari, F.V., Kirschstein, R.L., Sharp, D.G. and Peterson, M.R. Transmission of viral hepatitis to chimpanzees. Fed. Proc. 31:667,1972.

5. Chisari, F.V. and Edgington, T.S. Two mechanisms of null cell generation in a prototype human viral infection. Fed. Proc. 34:1012, 1975.

6. Chisari, F.V., Routenberg, J.A., and Edgington, T.S. Rosette inhibitory factor: An immunoregulatory serum lipoprotein associated with prolonged hepatocellular injury following viral hepatitis. Fed. Proc. 35:552, 1976.

7. Chisari, F.V. and Edgington, T.S. Lymphocyte E rosette inhibitory factor: A regulatory serum lipoprotein. Gastroenterology 71(2):334-335, 1976.

8. Chisari, F.V. Studies on the human T lymphocyte - sheep erythrocyte receptor. In: Regulatory mechanisms in lymphocyte activation: Proceedings of the Eleventh Leukocyte Culture conference, D.L. Lucas, Ed. Academic Press, New York, p. 352, 1977.

9. Chisari, F.V. and Edgington, T.S. Immunoregulatory properties of human serum very low density lipoproteins. Fed. Proc. 36:1318, 1977.

10. Mohagheghpour, N., Parhami, B., Dowlatshahi, K. and Chisari, F.V. Suppression of DNA synthesis by esophageal tumor extract. Fed. Proc. 37:1665, 1978.

11. Chisari, F.V. Modulation of lymphocyte activation by an aqueous extract of normal human liver. Fed. Proc. 37:1365, 1978.

12. Chisari, F.V. and Anderson, D.S. Deficient suppressor cell function in hepatitis B virus infection. Fed. Proc. 38:1157, 1979.

13. Chisari, F.V. and Anderson, D.S. Cytotoxic and suppressor cell function in hepatitis B. Clin. Res. 27:470A, 1979.

14. Anderson, D.S. and Chisari, F.V. Deficient adherent and mitogen-induced suppressor cell function in hepatitis B virus infection. Gastroenterology 76:1273, 1979.

15. Chisari, F.V., Curtiss, L.K. and Jensen, F.C. Regulation of Epstein-Barr virus-induced immortalization of human B lymphocytes by serum lipoproteins. Fed. Proc. 39:1197, 1980.

16. Chisari, F.V., Curtiss, L.K. and Jensen, F.C. Inhibition of Epstein-Barr virus induced B lymphocyte transformation by human serum lipoproteins. Proceedings of the 4th International Congress of Immunology (Paris), 1980.

17. Chisari, F.V. and Curtiss, L.K. Modulation of peripheral blood lymphocyte cyclic AMP levels by human plasma very low density lipoproteins. Fed. Proc. 40:1083, 1981.

18. Pizzo, C.J., Less, D. and Chisari, F.V. Suppression of lymphocyte activation by a protein derived from isolated perfused rat liver. Fed. Proc. 40:1003, 1981.

19. Chisari, F.V., Curtiss, L.K. and Jensen, F.C. Physiologic concentrations of normal human plasma lipoproteins inhibit Epstein-Barr virus-induced immortalization of human B lymphocytes. Clin. Res. 29(2):364A, 1981.

20. Sobol, R.E., Chisari, F.V., Royston, I. Use of immunoglobulin light chain analysis to detect bone marrow involvement in B-cell neoplasms. Proc. of Amer. Assoc. for Cancer Res. 22:186, 1981.

21. Chisari, F.V., Han, K. and Lee, D. Dietary modulation of hepatocellular injury and production of bioregulatory molecules by the perfused rat liver. Hepatology 1(5):502, 1981.

22. Milich, D.R. and Chisari, F.V. H-2 restriction of the murine immune response to hepatitis B surface antigen. Hepatology 1(5):531, 1981.

23. Milich, D.R. and Chisari, F.V. Regulation of antibody response to the a and d determinants of HBsAg map to the murine MHC locus. Fed. Proc. 41(3):444, 1982.

24. Chisari, F.V., Han, K., Lee, D. and Milich, D.R. Regulation of cellular immune function of bioregulatory products of the perfused rat liver. Fed. Proc. 41(3):812, 1982.

25. Leroux-Roels, G.G., Milich, D.R. and Chisari, F.V. Suppression of the acute graft-versus-host reaction in mice by in vitro or in vivo allosensitization in the presence of cyclosporin A. Immunobiology 163:257, 1982.

26. Kasahara, Y., Leroux-Roels, G., Chisari, F.V. and Nakamura, R. Glycylprolyl dipeptidylaminopeptidase (GP-DAP) in subpopulations of peripheral blood lymphocytes. Amer. Assoc. Clin. Chem., 1983.

27. Kasahara, Y., Leroux-Roels, G., Chisari, F.V. and Nakamura, R. Relation between glycylproyl Dipeptidylaminopeptidase (GP-DAP) in serum and lymphocytes. Proc. of XII World Congress of Pathology. Oct. 10-14, 1983, Tokyo, Japan.

28. Chisari, F.V., Milich, D.R. and Tiollais, P. Hepatitis B virus infection: A model for immunologically mediated hepatocellular injury: Abstracts of Falk Symposium No. 38 Mechanisms of Hepatocyte Injury and Death. Basel, October 3-5, 1983.

29. Milich, D.R., Leroux-Roels, G.G., Peterson, D.L., Lerner, R.A. and Chisari, F.V. Identification of distinct T cell determinants on HBsAg. Proc. of International Symposium on Viral Hepatitis, San Francisco, CA, March 7-10, 1984.

30. Milich, D.R., Peterson, D.L., Lerner, R.A. and Chisari, F.V. Distinct T cell determinants on HBsAg: Evidence for agretope-epitope T cell recognition sites. Fed. Proc. 43(6):1658, 1984.

31. Chisari, F.V., Milich, D.R., Tiollais, P., Pourcel, C., Palmiter, R., Pinkert, C. and Brinster, R. Development and preliminary characterization of transgenic mice carrying integrated hepatitis B virus DNA. Fed. Proc., 1984.

32. Milich, D.R., Thornton, G.B., Neurath, A.R., Kent, S.B., Michel, M., Tiollais, P. and Chisari, F.V. Enhanced immunogenecity at the T and B cell level of a high molecular weight (pre-S) polypeptide of HBsAg. Fed. Proc., 1984.

33. Romet-Lemonne, J.L., Thornton, G.B., Dubois, F., Essex, M., Milich, D.R. and Chisari, F.V. Early detection of antibodies to pre-S antigen in the preclinical phase of hepatitis B. Proceedings of a Symposium on the Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, May 2-5, 1985.

34. Milich, D.R., Thornton, G.B., Neurath, A.R., Kent, S.B., Michel, M., Tiollais, P. and Chisari, F.V. Circumvention of nonresponse to HBsAg by immunization with pre-S containing particles. Proceedings of a Symposium on the Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor, New York, May 2-5, 1985.

35. Chisari, F.V., Milich, D.R., Moriarty, A., Filippi, P., Palmiter, R., Pinkert, C. and Brinster, R. Expression of hepatitis B virus gene products in transgenic mice. Proceedings of a Symposium on the Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, May 2-5, 1985.

36. Milich, D.R., Thornton, G.B., McNamara, M.K., McLachlan, A. and Chisari, F.V. T and B Approaches to Vaccines, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, Sept. 11-15, 1985.

37. Ferrari, C., Penna, A., Fiaccadori, F. and Chisari, F.V. Selective sensitization of intrahepatic T lymphocytes to the hepatitis B nucleocapsid (core) antigen in patients with chronic active hepatitis B virus infection. Proceedings of the Midwinter Conference of Immunologists, Asilomar, CA, Jan. 25-28, 1986.

38. Chisari, F.V., Milich, D.R., McLachlan, A., Filippi, P., Palmiter, J.R., Pinkert, C. and Brinster, R. Hepatitis B virus gene expression in transgenic mice. Cell Biochem. Supp. 10A, Alan R. Liss, Inc., NY, 1986.

39. McLachlan, A., Raney, A.K., Riggs, M.G., Milich, D.R., Sorge, J. and Chisari, F.V. A hepatitis B amphotropic retroviral expression system. J. Cell Biochem. Supp. 10A, Alan R. Liss, Inc., NY, 1986.

40. Chisari, F.V., Milich, D.R., McLachlan, A., Filippi, P., Palmiter, R., Pinkert, C. and Brinster, R. Hepatitis B virus gene expression in transgenic mice. Proceedings of the Amer. Soc. for Virology, Annual Mtg, University of California, Santa Barbara, CA, June 22-26, 1986.

41. Milich, D.R., McLachlan, A., Chisari, F.V., Nakamura, T. Nonoverlapping T and B cell determinants identified on a hepatitis B surface antigen synthetic peptide. Proceedings of the 6th International Congress of Immunology, Toronto, Canada, July 6-11, 1986.

42. Ferrari, C., Penna, A., Fiaccadori, F. and Chisari, F.V. Selective sensitization of intrahepatic T lymphocytes to the hepatitis B nucleocapsid (core) antigen in patients with chronic active hepatitis B infection. Proceedings of the 6th International Congress of Immunology, Toronto, Canada, July 6-11, 1986.

43. Michel, M.L., Milich, D.R., Chisari, F.V. and Tiollais, P. Synthesis of hepatitis B surface antigen particles containing the pre-S region expression product. Proceedings of the Symposium on Biotechnology, Vaccines, Chemotherapy, and Viral Diseases, Chateau Lake Louise, Alberta, Canada, May 4-9, 1986.

44. McLachlan, A., Milich, D.R., Ralley, A.K., Riggs, M.G., Hughes, J.L., Sorge, J. and Chisari, F.V. A hepatitis B amphotropic retroviral expression system. Proceedings of a Symposium on the Molecular Biology of Hepatitis B Viruses. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, Aug. 28-31, 1986.

45. Ferrari, C., Penna, A., Fiaccadori, F. and Chisari, F.V. Intrahepatic, nucleocapsid antigen specific T cells in chronic active hepatitis B. Proceedings of a Symposium on the Molecular Biology of Hepatitis B Viruses. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, Aug. 28-31, 1986.

46. Chisari, F.V., Filippi, P., McLachlan, A., Milich, D.R., Riggs, M., Lee, S., Palmiter, R., Pinkert, C., and Brinster, R. Expression of the hepatitis B virus large envelope polypeptide inhibits hepatitis B surface antigen secretion in transgenic mice. Proceedings of a Symposium on the Molecular Biology of Hepatitis B Viruses. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY Aug. 28-31, 1986.

47. Chisari, F.V., Milich, D.R., McLachlan, A., Filippi, P., Buras, J., Pinkert, C.A., Palmiter, R.D. and Brinster, R. Intracellular accumulation of the hepatitis B virus large envelope polypeptide induces hepatocellular injury in transgenic mice. J. Cell Biochem. Suppl. 1 lD, p.4, 1986.

48. McLachlan, A., Milich, D.R., Raney, A.K., Hughes, J.L., Sorge, J., and Chisari, F.V. Expression of hepatitis B viral antigens using recombinant amphotropic retroviral vectors. J. Cell Biochem. Suppl. 11 D, p. 18, 1986.

49. Chisari, F.V., Milich, D.R., McLachlan, A., Filippi, P., Buras, J., Pinkert, C.A., Palmiter, R.D., and Brinster, R.L. Intracellular accumulation of the hepatitis B virus large envelope induces hepatocellular injury in transgenic mice. Proceedings of the 1987 International Symposium on Viral Hepatitis and Liver Disease, London, May 26-28, 1987.

ABSTRACTS

50. Ferrari, C., Penna, A., Mondelli, M., Fiaccadori, F., Chisari, F.V. Intrahepatic, HBsAg specific, regulatory T cell networks in chronic active hepatitis B. Proceedings of the 1987 International Symposium on Viral Hepatitis and Liver Disease, London, May 26-28, 1987.

51. McLachlan, A., Milich, D.R., Raney, A.K., Hughes, J.L., Sorge, J. and Chisari, F.V. Expression of hepatitis B viral antigens using recombinant amphotropic retroviral vectors. Proceedings of the 1987 International Symposium on Viral Hepatitis and Liver Disease, London, May 26-28, 1987.

52. Ferrari, C., Penna, A., Mondelli, M.U., Guiberti, T., Fiaccadori, R. and Chisari, F.V. Liver derived nucleoprotein specific T cell clones in chronic active hepatitis B provide help to B cells for anti-HBc production. Proceedings of the Annual Meeting, Italian Association for the Study of the Liver, Rome, May 21-22, 1987.

53. Raney, A.K., Milich, D.R., Hughes, J.L., Sorge, J., Chisari, F.V. and McLachlan, A. High efficiency retroviral-mediated transfer of hepatitis B virus antigen expression. Proceedings of the 1987 Symposium on the Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, Sept. 28-30, 1987.

54. Chisari, F.V., Klopchin, K., Shutter, J.R., Moss, B., Pinkert, C.A., Palmiter, R.D., Brinster, R.L. Immunologically mediated hepatocellular injury and serum HBsAg clearance in hepatitis B virus transgenic mice. Proceedings of the 1988 Meeting on Molecular Biology of Hepatitis B Virus, University of California, San Diego, La Jolla, CA Aug. 8-11, 1988.

55. Chisari, F.V., Filippi, P., Shutter, J.R., Klopchin, K., Dunsford, H., Sell, S., Pinkert, C.A., Palmiter, R.D., Brinster, R.L. Development of hepatocellular carcinoma in the context of chronic hepatocellular injury in hepatitis B virus transgenic mice. Proceedings of the 1988 Meeting on Molecular Biology of Hepatitis B Viruses, University of California, San Diego, La Jolla, CA, Aug. 8-11, 1988.

56. Moriyama,T., Guilhot, S., Klopchin, K., Portillo, G., Moss, B., Pinkert, C.A., Palmiter, R.D., Brinster, R.L., Chisari, F.V. Induction of liver cell injury in hepatitis B virus envelope transgenic mice by HBsAg-specific cytotoxic T cell lines. Proceedings of the Cold Spring Harbor Laboratory Symposium Hepatitis B Viruses, Cold Spring Harbor, NY, Sept. 25-28, 1989.

57. Chisari, F.V., Klopchin, K., Sell, S., Dunsford, H., Pinkert, C., Palmiter, R., Brinster, R. Molecular pathogenesis of hepatocellular carcinoma in HBV transgenic mice. Proceedings of the Cold Spring Harbor Laboratory Symposium on Hepatitis B Viruses, Cold Spring Harbor, NY, Sept. 25-28, 1989.

58. Penna, A., Bertoletti, A., Cavalli, A., Valli, A., Fowler, P., Moss, B., Fiaccadori, F., Chisari, F.V., Ferrari, C. Hepatitis B Virus (HBV) envelope-specific CD4-mediated T cell cytotoxicity in vaccine recipients. Cold Spring Harbor Laboratory, Proceedings of the Hepatitis B Viruses Meeting, Cold Spring Harbor, NY, Sept. 25-28, 1989.

ABSTRACTS

59. Gilles, P.N., Pasquinelli, C., Moriyama, T., Fey, G., Chisari, F.V. Modulation of hepatitis B virus surface antigen expression during the acute phase response in transgenic mice. Proceedings of the Symposium on Animal Models of Human Diseases, Keystone, CO, March 31 - April 5, 1990.

60. Ferrari, C., Penna, A., Bertoletti, A., Cavalli, A., Chisari, F.V. and Fiaccadori, F. Features of the human T cell response to hepatitis B virus core and e antigens. Proceedings of the AASLD Conference on Immunology and the Liver, Washington, DC, March 30 - April 1, 1990.

61. Moriyama, T., Guilhot, S., Klopchin, K., Portillo, G., Moss, B., Pinkert, C., Palmiter, R.D., Brinster, R.L., and Chisari, F.V. Induction of liver cell injury in hepatitis B virus envelope transgenic mice by HBsAg-specific cytotoxic T cell lines. Proceedings of AASLD Conference on Immunology and the Liver, Washington, DC, March 30 - April 1, 1990.

62. Chisari, F.V. Transgenic models of DNA tumor virus mediated oncogenesis. Proceedings of the 1990 International Papillomavirus Workshop, Heidelberg, Germany, May 12-17, 1990.

63. Gilles, P.N., Guerrette, D., Klopchin, K. and Chisari, F.V. Hepatocellular injury in HBV transgenic mice. Proceedings of the 1990 Symposium on the Molecular Biology of Hepatitis B Viruses Conference, UCSD, La Jolla, CA, Aug. 5-9, 1990.

64. Gilles, P.N., Pasquinelli, C., Moriyama, T., Wen, L., Fey, G. and Chisari, F.V. Regulation of hepatitis B virus gene expression in transgenic mice during the acute phase response. Proceedings of the 1990 Symposium on the Molecular Biology of Hepatitis B Viruses, UCSD, La Jolla, CA, Aug. 5-9, 1990.

65. Pasquinelli, C., Moriyama, T. and Chisari, F.V. Analysis of putative mechanisms of hepatocarcinogenesis in hepatitis B virus (HBV) transgenic mice. Proceedings of the 1990 Symposium on the Molecular Biology of Hepatitis B Viruses, UCSD, La Jolla., CA, Aug. 5-9, 1990.

66. Guilhot, S., Margolskee, Fowler, P., Portillo, G. and Chisari, F.V. Stable expression of HBV encoded proteins in Epstein-Barr virus immortalized human B cell lines. Proceedings of the 1990 Symposium on the Molecular Biology of Hepatitis B Viruses, UCSD, La Jolla, CA, Aug. 5-9, 1990.

67. Chisari, F.V. Molecular pathogenesis of hepatocellular carcinoma in HBV transgenic mice. Proceedings of the 15th International Cancer Congress, Hamburg Germany Aug 16-22, 1990.

68. Chisari, F.V. Hepatocellular injury leads to hepatocellular carcinoma in hepatitis B virus transgenic mice. Proceedings of a Symposium on the Origins of Human Cancer, Cold Spring Harbor, NY, Sept. 4-10, 1990.

69. Chisari, F.V. Molecular pathogenesis of hepatocellular carcinoma in HBV transgenic mice. Proceedings of a Symposium on the Hepatocellular Carcinoma in North America, Bethesda, MD, Sept. 26-27, 1990.

70. Chisari, F.V., Moriyama, T. and Gilles, P.N. Multiple pathways of hepatitis B virus pathogenesis. Proceedings of a Symposium on the Molecular Biology of Human Pathogenic Viruses, Lake Tahoe, CA, Mar. 8-15, 1991.

71. Sell, S., Hunt, J.M., Dunsford, H., and Chisari, F.V. Synergy between hepatitis B virus expression and chemical hepatocarcinogens in transgenic mice. Proceedings of the American Association for Cancer Research 82nd Annual Meeting, Houston, Texas, March 1991.

72. Chisari, F.V., Moriyama, T., Gilles, P.N., Bhavani, K. and Pasquinelli, C. Multiple pathways of hepatitis B virus pathogenesis. Proceedings of the US-Japan Cooperative Science Program on Viral Hepatitis, New York, NY, May 1991.

73. Chisari, F.V., Gilles, P.N. and Moriyama, T. Pathogenesis of liver cell injury and hepatocellular carcinoma in hepatitis B virus transgenic mice. Proceedings of the International Symposium on Gene Expression during Liver Differentiation and Disease, Sorrento, Italy, June 1991.

74. Bertoletti, A., Ferrari, C., Penna, A., Fiaccadori, F., Schlicht, H.J., Fowler, P., Guilhot, S. and Chisari, F.V. HLA Class I restricted cytotoxic T cells in acute viral hepatitis B type B. Proceedings of the European Association for the Study of the Liver, Palma de Mallorca, Spain, September 10, 1991.

75. Penna, A., Chisari, F.V., Bertoletti, A., Missale, G., Guiberti, T., Marchelli, S., Galati, L., Fiaccadori, F. and Ferrari, C. Cytotoxic T lymphocytes recognize an HLA-A2 restricted epitope within the hepatitis B virus nucleocapsid antigen. Proceedings of the European Association for the Study of the Liver, Palma de Mallorca, Spain, September 10, 1991.

76. Fowler, P., Guerrette, D., Hagen, T., Ames, B.N., Cross, A. Curnutte, J. and Chisari, F.V. A role for reactive oxygen intermediates in the pathogenesis of liver cell injury and malignant transformation in hepatitis B virus transgenic mice. Proceedings of the Institut Pasteur Conference on Hepatitis B Viruses, Paris, France, October, 1991.

77. Bertoletti, A., Ferrari, C., Penna, A. Fiaccadori, F., Margolskee, R., Schlicht, H.J., Fowler, P., Guilhot, S., and Chisari, F.V. Recognition of endogenously synthesized HBV nucleocapsid antigen by HLA class I restricted, CD8 positive cytotoxic T cells in acute viral hepatitis type B. Proceedings of the Institut Pasteur Conference on Hepatitis B Viruses, Paris, France, October 1991.

78. Guilhot, S., Gilles, P.N. and Chisari, F.V. Inducible post-transcriptional control of HBV gene expression. Proceedings of the Institut Pasteur Conference on Hepatitis B Viruses, Paris, France, October 1991.

ABSTRACTS

79. Penna, A., Chisari, F.V., Bertoletti, A., Missale, G., Guiberti, T., Marchelli, S., Fowler, P., Fiaccadori, F. and Ferrari, C., Hepatitis B virus nucleocapsid specific cytotoxic T cell response in man: Identification of an immunodominant HLA A2 restricted epitope. Proceedings of the Institut Pasteur Conference on Hepatitis B Viruses, Paris, France, October 1991.

80. Pasquinelli, C., Fowler, P., Curnutte, J.T., Kuo, M.T., Hagen, T., Ames, B.N., Huang, S.-N. and Chisari, F.V. Molecular pathogenesis of hepatocellular carcinoma in HBV envelope transgenic mice. In: Transgenic Animal Models in Biomedical Research (D.G. Scarpelli, G. Migaki, J.M. Pletcher, eds.) pp. 13-16, 1991.

81. Toshkov, I., Chisari, F. and Bannasch, P. Phenotypic patterns of preneoplastic and neoplastic hepatic lesions in hepatitis B virus transgenic mice. Proceedings of a Symposium on the Concepts and Molecular Mechanisms of Multistage Carcinogenesis. Santa Margherita, Italy, November 1991. Europ. J. Cancer 27:S64, 1991.

82. Pasquinelli, C., Fowler, P., Curnutte, J.T., Kuo, M.T., Hagen, T., Ames, B.N., Huang, S.-N. and Chisari, F.V. Molecular pathogenesis of hepatocellular carcinoma in HBV envelope transgenic mice. Proceedings of the Third International Symposium on Viral Hepatitis and Hepatocellular Carcinoma, Taipei, Taiwan, R.O.C., December 1991.

83. Pasquinelli, C., Fowler, P., Curnutte, J.T., Kuo, M.T., Hagen, T., Ames, B.N., Huang, S.-N. and Chisari, F.V. Molecular pathogenesis of hepatocellular carcinoma in HBV envelope transgenic mice. Proceedings of the US-Japan Cooperative Science Program on the Molecular Genetic Analysis of Hepatocarcinogenesis -- Nat'l Cancer Institute US/Japan Meeting, Honolulu, Hawaii, February 8-9, 1992.

84. Chisari, F.V., Ando, K., Wirth, S., Moriyama, T., Guilhot, S., Huang, S., Missale, G., Bertoletti, A., Penna, A. and Ferrari, C. Hepatitis B virus cytotoxic T cell response: Characteristics in man and consequences in transgenic mice. Proceedings of the 1992 Keystone Symposium on Cell Biology of Virus Entry, Replication and Pathogenesis. p. 111, 1992.

85. Nayersina, R., Missale, G., Fowler, P., Bertoletti, A., Penna, A., Ferrari, C. and Chisari, F.V. Cytotoxic T cell responses specific for envelope and core epitopes of hepatitis B virus in patients with acute viral hepatitis, type B. FASEB Annual Meeting, Anaheim, CA April 5-9, 1992.

86. Isom, H., Chisari, F. and Miller, T. Altered liver gene expression in hepatocyte cell lines expressing HBsAg polypeptides. FASEB Annual Meeting, Anaheim, CA April 5-9, 1992.

87. Chisari, F.V., Ando, K., Wirth, S., Moriyama, T., Guilhot, S., Huang, S., Missale, G., Bertoletti, A., Penna, A. and Ferrari, C. Hepatitis B virus cytotoxic T cell response: Characteristics in man and consequences in transgenic mice. International Liver Forum. Tokyo '92 - Pathobiology of Hepatitis. Tokyo, Japan, April 14-15, 1992.

88. Pasquinelli, C., Fowler, P., Curnutte, J.T., Kuo, M.T., Hagen, T., Ames, B.N., Huang, S.-N. and Chisari, F.V. Molecular pathogenesis of hepatocellular carcinoma in HBV envelope transgenic mice. Symposium on Human Tumorviruses, Heidelberg, Germany, May 3-6,1992.

89. Missale, G., Ferrari, C., Penna, A., Bertoletti, A., Fiaccadori, F., Fowler, P., Nayersina, R., Guilhot, S. and Chisari, F. Cytotoxic T cell response to hepatitis B virus core and envelope antigens in viral hepatitis. International Congress of Immunology. Budapest, Hungary. August 23-28, 1992.

90. Pasquinelli, C., Bhavani, K., Godowski, P.J., Schirmacher, P., Rogler, C. and Chisari, F.V. IGF-II reactivation is a late event in hepatocarcinogenesis in hepatitis B virus envelope transgenic mice. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

91. C. Pasquinelli, Bhavani, K., Guilhot, S., Guidotti, L.G., Schaller, H. and Chisari, F.V. Production and characterization of transgenic mice containing the complete HBV genome. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

92. Missale, G., Fowler, P., Nayersina, R., Bertoletti, A., Penna, A., Redeker, A., Person, J., Pockros, P., Chesnut, B., Vitiello, A., Fiaccadori, F., Ferrari, C., and Chisari, F.V. Epitope mapping of the cytotoxic T cell response to hepatitis B virus core and envelope antigens in patients with acute viral hepatitis. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

93. Guidotti, L.G., Guilhot, S., Gilles, P. and Chisari, F.V. Regulation of hepatitis B virus gene expression by inflammatory cytokines in transgenic mice. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

94. Michalak, T.I., Pasquinelli, C., Guilhot, S., and Chisari, F.V. Prolonged persistence of HBV DNA in the serum and peripheral blood mononuclear cells of patients convalescent from acute viral hepatitis. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

95. Ando, K., Moriyama, T., Wirth, S., Gilles, P., Guerrette, D., Huang, S-N., Schreiber, R., Schlicht, H.J. and Chisari, F.V. Cytotoxic T cell induced fulminant hepatitis in HBV envelope transgenic mice. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

96. Guilhot, S., LaMonica, N., Lai, M.M.C., Huang, S. and Chisari, F.V. Expression of the hepatitis delta large antigen in transgenic mice. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

97. Wirth, S., Moriyama, T., Schlicht, H.-J., Ando, K. and Chisari, F.V. Analysis of tolerance at the T and B cell levels in hepatitis B virus envelope transgenic mice. Molecular Biology of Hepatitis B Viruses Symposium, Aug. 30-Sep. 3, 1992, San Diego, CA.

98. Ando, K., Moriyama, T., Wirth, S., Gilles, P., Guerrette, D., Huang, S-N., Schreiber, R., Schlicht, H.J. and Chisari, F.V. Cytotoxic T cell induced fulminant hepatitis in HBV envelope transgenic mice. Immunology of Hepatitis B Virus Infection, Basel Liver Week, Basel, Switzerland, October 18-20, 1992.

99. Huang, S.N. and Chisari, F.V. Quantitative analysis of hepatocellular proliferation during hepatocarcinogenesis in HBV transgenic mice. U.S. and Canadian Academy of Pathology Meeting, New Orleans, LA, March 17, 1993.

100. Kirby, G.M., Wild, C.P., Chisari, F.V., Vatanasapt, V. and Lang, M.A. Liver injury is associated with induction of hepatic cytochrome P450 2a-5. 1993 American Association for Clinical Research Meeting, Washington, D.C., Apr. 30-May 3, 1993.

101. Chisari, F.V., Fowler, P., Nayersina, R., Cerny, A., Missale, G. and Ferrari, C. The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus. Keystone Symposium "Molecular Immunology of Virus Infections" Taos, N.M., March 17-24, 1993.

102. Cerny, A., McHutchison, J.G., Fowler, P. and Chisari, F.V. Cytotoxic T lymphocytes restricted by HLA-A2 specific for hepatitis C virus (HCV) derived peptides are present in the peripheral blood of patients with chronic hepatitis C. Keystone Symposium "Molecular Immunology of Virus Infections" Taos, N.M., March 17-24, 1993.

103. Cerny, A., McHutchison, J.G., Fowler, P. and Chisari, F.V. Cytotoxic T lymphocytes restricted by HLA-A2 specific for hepatitis C virus (HCV) derived peptides are present in the peripheral blood of patients with chronic hepatitis C. 1993 International Symposium on Viral Hepatitis and Liver Disease, Tokyo, Japan, May 11-15, 1993.

104. Chisari, F.V. The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus. 1993 International Symposium on Viral Hepatitis and Liver Disease, Tokyo, Japan, May 11-15, 1993.

105. Guidotti, L.G., K. Ando, P.N. Gilles, S. Guilhot and F.V. Chisari, Regulation of hepatitis B virus gene expression by cytotoxic T cells and inflammatory cytokines in HBV transgenic mice. Cold Spring Harbor Symposium, "Regulation of Liver Gene Expression in Health and Disease", Cold Spring Harbor, N.Y., May 5-9, 1993.

106. Chisari, F.V. The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus. International Meeting on: Biology, Immunopathology and clinic of hepatitis viruses from infection to disease. Parma, Italy, June 3-5, 1993.

107. Missale, G. and F.V. Chisari, Class I independent pathways contribute to recurrent hepatitis B virus induced liver disease after liver transplantation. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

108. Ando, K., L.G. Guidotti, S. Wirth, S. Huang, T. Ishikawa, H.J. Schlicht and F.V. Chisari, Class I restricted immunopathogenesis is a multistep process in HBsAg transgenic mice. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

109. Guidotti, L.G., K. Ando, S. Guilhot, L. Runkel, H. Schaller and F.V. Chisari, Regulation of HBV gene expression by class I restricted cytotoxic T lymphocytes in vivo. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

110. Chisari, F.V., P. Fowler, R. Nayersina, A. Cerny, B. Rehermann, H.J. Schlicht, G. Missale, A. Bertoletti and C. Ferrari, The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

111. Guidotti, L.G., V. Martinez, Y.T. Loh, C. Rogler and F.V. Chisari, Hepatitis B nucleocapsid transgenic mice. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

112. Cerny, A., P. Fowler, M. Brothers, J. Person, J. McHutchison and F.V. Chisari, Detection of HLA-A2 restricted, HBV specific CTL precursors in uninfected individuals and in patients with chronic hepatitis. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

113. Bertoletti, A., F.V. Chisari, A. Penna, P. Scaccaglia, M. Levrero, A. Costanzo, F. Fiaccadori and C. Ferrari. Cytotoxic T cell response and hepatitis B virus persistence. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

114. Michalak, T.I., I.U. Pardoe and F.V. Chisari. Heparin inhibits detection of WHV and HBV DNA by the polymerase chain reaction. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

115. Isom, H., F. Chisari, P.J. Gilles and T. Miller. Hepatocyte cell lines expressing HBsAg are not transformed. 1993 Molecular Biology of Hepatitis B Viruses Meeting, Washington, D.C., August 1-6, 1993.

116. Chisari, F.V. Mechanisms of hepatocarcinogenesis in hepatitis B virus infection. Harvard Longwood Oncology "Viruses in Cancer" Symposium , Harvard School of Medicine, Boston, MA October 15, 1993.

117. Chisari, F.V. The HLA class I restricted cytotoxic T lymphocyte response to the hepatitis B virus in man and transgenic mice. Abbott Laboratories 1993 Hepatitis Virus Symposium, Abbott Park, IL, November 2, 1993.

ABSTRACTS

118. Guidotti, L.G., K. Ando, M.V. Hobbs, T. Ishikawa, L. Runkel and F.V. Chisari. Cytotoxic T lymphocyte mediated regulation of hepatitis B virus gene expression in vivo. Keystone Symposia "Human Tumor Viruses" Feb. 13-20, 1994, Taos, N.M.

119. Hu, J.F., F.V. Chisari and T.C. Campbell. Modulating effect of dietary protein on transgene expression in hepatitis B virus (HBV) transgenic mice. American Association for Cancer Research (AACR) Annual Meeting, Apr. 10-13, 1994, San Francisco, CA.

120. Cerny, A., P. Fowler, M.A. Brothers, M. Houghton and F.V. Chisari. Human primary cytotoxic T cells recognizing endogenously synthesized antigen can be induced in vitro. Keystone Symposia "Lymphocyte Activation", Keystone, CO, April 10-17, 1994.

121. Huang, S.N., P. Fowler and F.V. Chisari. Peroxisomal changes in the development of liver tumor in HBsAg transgenic mice. U.S. and Canadian Academy of Pathology meeting, Spring, 1994.

122. Hu, J-F, F.V. Chisari and T.C. Campbell. Modulating effect of dietary protein on transgene expression in hepatitis B virus (HBV) transgenic mice. Proc. Amer. Assoc. for Cancer Res. 35:104, 1994.

123. Missale, G., R. Rochford, M. Hobbes, F. Fiaccadori, C. Ferrari and F.V. Chisari. Intrahepatic cytokine messenger RNA expression in chronic HBV and HCV infections. Italian Association for the Study of the Liver, May, 1994.

124. Chesnut, R.W., A. Vitiello, P. Wentworth, J. Fikes, F.V. Chisari, R. Kubo, H.M. Grey, R. Ahmed, R. Rose and A. Sette. Use of antigenic peptides to induce cytotoxic T lymphocyte immunity in man. Results of a clinical study and application to HCV infection. 2nd Internat'l Meeting on Hepatitis C and Related Viruses, San Diego, CA, July 31-August 5, 1994.

125. Cerny, A., J.G. McHutchison, C. Pasquinelli, M.E. Brown, M.A. Brothers, P. Fowler, M. Houghton and F.V. Chisari. Hepatitis C virus specific cytotoxic T cell response: Identification of multiple HLA-A2 restricted epitopes. 2nd Internat'l Meeting on Hepatitis C and Related Viruses, San Diego, CA, July 31-August 5, 1994.

126. Pasquinelli, C., J.M. Shoenberger, E. Glezer, K. Berger, M. Houghton and F.V. Chisari. Production and characterization of hepatitis C virus (HCV) core, E1 and E2 transgenic mice. 2nd Internat'l Meeting on Hepatitis C and Related Viruses, San Diego, CA, July 31-August 5, 1994.

127. Rehermann, B., P. Fowler and F.V. Chisari. The cytotoxic T lymphocyte response to multiple hepatitis B virus polymerase epitopes during and after acute hepatitis B virus infection. American Association for the Study of Liver Diseases annual meeting, Chicago, IL. Nov. 11-15, 1994.

128. Ando, K., L.G. Guidotti, T. Ishikawa, A. Cerny and F.V. Chisari. Cytotoxic T lymphocytes do not have access to extrahepatic HVC in transgenic mice. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

129. Guidotti, L.G., T. Ishikawa, B. Matzke, H. Schaller and F.V. Chisari. Cytotoxic T lymphocytes suppress hepatocellular HBV gene expression and replication in transgenic mice. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

130. Guidotti, L.G., B. Matzke, H. Schaller and F.V. Chisari. Characterization of transgenic mice that replicate HBV at high level in the liver. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

131. Rehermann, B., P. Fowler and F.V. Chisari. The cytotoxic T lymphocyte response to multiple hepatitis B virus polymerase epitopes during and after acute hepatitis B virus infection. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

132. Rehermann, B., C. Pasquinelli and F.V. Chisari. Mutations in CTL epitopes are not common in patients with persistent HBV infection. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

133. Missale, G., R. Rochford, M. Hobbs, C. Ferrari, F. Fiaccadori and F.V. Chisari. Intrahepatic cytokine messenger RNA expression in chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infections. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

134. Bertoletti, A., A. Penna, F.V. Chisari, M. Levrero, A. Sette, F. Fiaccadori and C. Ferrari. Natural variants of hepatitis B virus cytotoxic epitopes are T cell receptor antagonists for antiviral cytotoxic T cells. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

135. Chemin, I., G. Kirby, M. Lang, F.V. Chisari, P. Beaune, R. Montesano and C.P. Wild. Differential induction of cytochrome P450s responsible for aflatoxin metabolism in HBV transgenic mice. 1994 Molecular Biology of Hepatitis B Viruses Meeting, Paris, France, October 3-6, 1994.

136. Cerny, A., J.G. McHutchison, P. Fowler, M.A. Brothers, B. Grabscheid, M. Houghton and F.V. Chisari. Cytotoxic T lymphocytes specific for hepatitis C virus (HCV): Identification of multiple HLA-A2 restricted epitopes. Molecular Mechanisms of Microbial Pathogenesis Symposium, Siena, Italy, Oct. 23-25, 1994.

137. Guidotti, L.G., K. Ando, T. Ishikawa, L. Tsui and F.V. Chisari. Cytotoxic T lymphocytes can clear hepatitis B virus from the hepatocyte without killing the cell. Keystone Symposium "Molecular Aspects of Viral Immunity", Keystone, CO, Jan. 16-23, 1995.

138. Cerny, A. B. Grabscheid, M.A. Brothers, W.J. Pichler and F.V. Chisari. Quantitation of human viral epitope specific CTL precursors by limiting dilution. Keystone Symposium "Molecular Aspects of Viral Immunity", Keystone, CO, Jan. 16-23, 1995.

139. Chisari, F.V. Intracellular inactivation of the hepatitis B virus by the immune response. U.S.-Japan Co-operative Hepatitis Panel Meeting, Tokyo, Japan, Jan. 23-24, 1995.

140. Fernandes, C.L., S.J. Chavan, B. Polsky, F.V. Chisari, J.A. Montali, D.E. Schmidt, Jr. and H.J. Prochaska. Regulation of glutathione S-transferases: Clues from a worm, a virus, and a mouse with hepatitis. ISSX-Workshop on Glutathione S-transferases, Apr. 22-25, 1995, Noordwijkerhout, The Netherlands.

141. Guidotti, L.G., T. Ishikawa, M.V. Hobbs, L. Tsui, P. Borrow and F.V. Chisari. Intracellular inactivation of hepatitis B virus by the immune system. Liver Development, Gene Regulation and Disease Meeting, Arcachon, France, May 9-14, 1995.

142. Guidotti, L.G., T. Ishikawa, M.V. Hobbs, P. Borrow, M.B.A. Oldstone and F.V. Chisari. Intracellular Inactivation of the Hepatitis B Virus by the Immune Response. Pathobiology of Transgenic and Other Induced Mutant Animals Symposium, San Diego, CA June 11, 1995.

143. Rehermann, B. and F.V. Chisari. The cytotoxic T cell response to HBV and HCV. Eighth International Congress of Mucosal Immunology, San Diego, CA., July 16-20, 1995.

144. Tsui, L.V., L.G. Guidotti, T. Ishikawa and F.V. Chisari. HBV-specific cytotoxic T lymphocytes downregulate HBV RNA expression at the transcriptional and post-transcriptional levels in HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Meeting, San Diego, CA, July 23-27, 1995.

145. Ishikawa, T., L.G. Guidotti, Y. Nakamoto, P. Fowler, V.M. Alvarado, M.L. Michel, R. Whalen, H.L. Davis, J. Reimann and F.V. Chisari. Antiviral effects of HBV DNA-based immunization in transgenic mice that replicate the hepatitis B virus. The Molecular Biology of Hepatitis B Viruses Meeting, San Diego, CA, July 23-27, 1995.

146. Guidotti, L.G., P. Borrow, M.V. Hobbs, B. Matzke, M.B.A. Oldstone and F.V. Chisari. Viral cross-talk: Hepatitis B virus clearance during an unrelated viral infection of the liver. The Molecular Biology of Hepatitis B Viruses Meeting, San Diego, CA, July 23-27, 1995.

147. Guidotti, L.G., B. Matzke, C.E. Rogler, J. Shoenberger and F.V. Chisari. The hepatitis B virus precore protein inhibits HBV replication in transgenic mice. The Molecular Biology of Hepatitis B Viruses Meeting, San Diego, CA, July 23-27, 1995.

148. Rehermann, B., C. Ferrari and F.V. Chisari. The cytotoxic T lymphocyte response to HBV persists long after recovery from acute viral hepatitis. The Molecular Biology of Hepatitis B Viruses Meeting, San Diego, CA, July 23-27, 1995.

149. Pasquinelli, C., J.M. Shoenberger, J. Chung, M. Selby, K. Berger, R. Lesniewski, M. Houghton and F.V. Chisari. Hepatitis C virus core and E2 protein expression in the liver of

transgenic mice. Third International Meeting on Hepatitis C Virus and Related Viruses, Gold Coast, Australia, Aug. 28-Sep. 3, 1995.

150. Rehermann, B., K.M. Chang, J.G. McHutchison and F.V. Chisari. Comparison of the cytotoxic T lymphocyte responses to HBV and HCV in patients with chronic hepatitis. Third International Meeting on Hepatitis C Virus and Related Viruses, Gold Coast, Australia, Aug. 28-Sep. 3, 1995.

151. Rehermann, B., K.M. Chang, J.G. McHutchison, R.P. Kokka, M. Houghton and F.V. Chisari. The peripheral CTL response to HCV does not reflect viral load or disease activity in chronically infected patients. Third International Meeting on Hepatitis C Virus and Related Viruses, Gold Coast, Australia, Aug. 28-Sep. 3, 1995.

152. Chang, K.M., B. Rehermann, J.G. McHutchison, C. Pasquinelli, M. Houghton and F.V. Chisari. Viral escape from The HLA-A2 restricted cytotoxic T lymphocyte response is not common during chronic hepatitis C virus infection. Third International Meeting on Hepatitis C Virus and Related Viruses, Gold Coast, Australia, Aug. 28-Sep. 3, 1995.

153. Lanford, R.E., D. Chavez, F.V. Chisari and C. Sureau. Lack of detection of negative strand HCV RNA in peripheral blood lymphocytes and other extrahepatic tissues using the highly strand specific rTth RT/PCR. Third International Meeting on Hepatitis C Virus and Related Viruses, Gold Coast, Australia, Aug. 28-Sep. 3, 1995.

154. Rehermann, B., C. Ferrari and F.V. Chisari. The hepatitis B virus specific CTL response persists for years after recovery from acute viral hepatitis. 4th United European Gastroenterology Week, Berlin, Germany, Sep. 17-21, 1995.

155. Rehermann, B., K.M. Chang and F.V. Chisari. Quantitative analysis of the cytotoxic T cell response in HCV infected patients during interferon therapy. 4th United European Gastroenterology Week, Berlin, Germany, Sep. 17-21, 1995.

156. Rehermann, B., K.M. Chang and F.V. Chisari. The cytotoxic T cell response to multiple hepatitis C virus epitopes during chronic HCV infection. 4th United European Gastroenterology Week, Berlin, Germany, Sep. 17-21, 1995.

157. Rehermann, B., K.M. Chang, J.G. McHutchison, F.V. Chisari. Comparative analysis of the cytotoxic T cell response in chronic HBV and HCV infection. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 3-7, 1995.

158. Rehermann, B., C. Ferrari and F.V. Chisari. The cytotoxic T lymphocyte response persists long after recovery from acute viral hepatitis. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 3-7, 1995.

159. Rehermann, B., K.M. Chang, J.G. McHutchison, R.P. Kokka, M. Houghton and F.V. Chisari. The peripheral blood cytotoxic T lymphocyte response to HCV does not reflect disease

activity during chronic HCV infection. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 3-7, 1995.

160. Chang, K.M., B. Rehermann, J.G. McHutchison, C. Pasquinelli and F.V. Chisari. Viral escape from the HLA-A2 restricted cytotoxic T lymphocyte response is not common during chronic hepatitis C virus infection. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 3-7, 1995.

161. Rehermann, B., D. Lau, J.H. Hoofnagle and F.V. Chisari. Hepatitis B virus specific cytotoxic T lymphocyte responses following recovery from acute and chronic HBV infection. US-Japan Hepatitis Panel, Kona, Hawaii, Jan. 16-17, 1996.

162. Guidotti, L.G., T. Ishikawa, Y. Nakamoto and F.V. Chisari. Cytopathic and noncytopathic pathways for immune mediated clearance of the hepatitis B virus by cytotoxic T lymphocytes and inflammatory cytokines. US-Japan Hepatitis Panel, Kona, Hawaii, Jan. 16-17, 1996.

163. Guidotti, L.G., T. Ishikawa , P. Borrow, M.B. Hobbs, L. Tsui and F.V. Chisari. Hepatitis B virus pathogenesis and noncytotoxic immune-mediated viral clearance in transgenic mice. German Society of Cell Biology Meeting, Hamburg, Germany, March 24-28, 1996.

164. Guidotti, L.G., T. Ishikawa, P. Borrow, M.V. Hobbs and F.V. Chisari. Intracellular inactivation of the hepatitis B virus. Digestive Diseases Week, Kobe, Japan Apr. 18-20, 1996.

165. Kaplanski, C., F.V. Chisari, P. Srivatanakul, C.P. Wild. Minisatellite sequence rearrangements are rare in liver tumors from hepatitis B virus transgenic mice but common in hepatitis B virus associated human hepatocellular carcinoma. 87th Annual Meeting of the American Association for Cancer Research, Washington, D.C., Apr. 20-24, 1996.

166. Chisari, F.V. Pathogenesis of viral hepatitis. IX Triennial International Symposium on Viral Hepatitis and Liver Disease, Rome, Italy, Apr. 21-25, 1996.

167. Guidotti, L.G., T. Ishikawa, Y. Nakamoto, K. Ando, L. Tsui and F.V. Chisari. Hepatitis B virus inactivation by CTL and inflammatory cytokines. 6th International Tumor Necrosis Factor Congress, Rhodes, Hellas, Greece, May 8-12, 1996.

168. Franco, A., V. Alvarado, L.G. Guidotti, F.V. Chisari. T helper-1 lymphocytes mediate liver disease in hepatitis B virus transgenic mice. ASBMB/ASIP/AAI Joint Meeting, New Orleans, LA, June 1-6, 1996.

169. Chisari, F.V. and B. Rehermann. HBV and HBV-specific CTL persist long after recovery from acute and chronic HBV infection. American Society for Virology 15th Annual Meeting, London, Ontario, Canada, July 13-17, 1996.

170. Guidotti, L.G., T. Ishikawa, Y. Nakamoto, K. Ando, L. Tsui and F.V. Chisari. Hepatitis B virus inactivation by CTL and cytokines. Xth International Congress of Virology, Jerusalem, Israel, August 11-16, 1996.

171. Rehermann, B. and F.V. Chisari. HBV and HBV-specific CTL persist long after recovery from acute and chronic HBV infection. 27th Annual Meeting of the Deutsche Gesellschaft für Immunologie, Universität Hamburg, September 26-28, 1996.

172. Reifenberg, K., J. Köck, H. Wilts. F.V. Chisari, L.G. Guidotti and H.-J. Schlicht. An intact X-gene is essential for expression of the HBV core-protein in the liver of transgenic mice. Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, September 18-22, 1996.

173. Guidotti, L., B. Matzke and F.V. Chisari. Suppression of hepatitis B virus replication is independent of hepatocyte turnover during massive liver cell regeneration in transgenic mice. Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, September 18-22, 1996.

174. Franco, A., L.G. Guidotti, V. Pasquetto and F.V. Chisari. MHC class II restricted T cells can cause hepatitis and suppress viral replication in HBV transgenic mice. Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, September 18-22, 1996.

175. Cavanaugh, V.J., L.G. Guidotti and F.V. Chisari. Interleukin-12 inhibits hepatitis B virus replication by an interferon gamma dependent mechanism in HBV transgenic mice. Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, September 18-22, 1996.

176. Cavanaugh, V.J., L.G. Guidotti, L.V. Tsui and F.V. Chisari. Inhibition of hepatitis B virus replication during adenovirus and cytomegalovirus infection in HBV transgenic mice. Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, September 18-22, 1996.

177. Nakamoto, Y., L.G. Guidotti and F.V. Chisari. CTL-induced liver disease requires co-stimulation of both the Fas and perforin death pathways. Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, September 18-22, 1996.

178. Bertoni, R., P. Fowler, J. Sidney, A. Sette and F.V. Chisari. Recognition of HBV-specific CTL epitopes by multiple class I alleles in patients with acute hepatitis. Molecular Biology of Hepatitis B Viruses, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, September 18-22, 1996.

179. Nakamoto, Y., L.G. Guidotti, F. V. Chisari. CTL-Induced liver disease requires co-stimulation of both the Fas ligand- and perforin-activated death pathways. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 7-11, 1996.

180. Chang, K.M., B. Rehermann, J.G. McHutchison, C. Pasquinelli, F.V. Chisari. Cytotoxic T lymphocyte epitope variants in patients chronically infected with the hepatitis C virus. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 7-11, 1996.

ABSTRACTS

181. Nakamoto, Y., L.G. Guidotti, F.V. Chisari. A two hit model of CTL killing *in vivo*. Amer. Assoc. Immunologists, San Francisco, CA, Feb. 21-26, 1997.

182. Nakamoto, Y., L.G. Guidotti, F.V. Chisari. A two hit model of CTL killing *in vivo*. 6th Cell-Mediated Cytotoxicity Workshop, European Molecular Biology Organization, Kerkrade, The Netherlands, April 5-9, 1997.

183. Chang, K-M., B. Rehermann, J.G. McHutchison, C. Pasquinelli, F.V. Chisari. Cytotoxic T lymphocyte epitope variants in patients chronically infected with the hepatitis C virus. 4th International Meeting on Hepatitis C Virus and Related Viruses, Kyoto, Japan, March 6-10, 1997.

184. Chisari, F. V. Hepatitis B virus inactivation by CTL and inflammatory cytokines. 1st Kanazawa International Symposium on Cancer (KISC), Kanazawa, Japan, March 11, 1997.

185. Guidotti, L.G., Y. Nakamoto, V. Cavanaugh, T. Heise, F.V. Chisari. Hepatitis B virus inactivation by cytotoxic T lymphocytes and inflammatory cytokines. Regulation of Liver Gene Expression in Health and Disease, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, April 30-May 4, 1997.

186. Shimizu, Y., L. G. Guidotti, P. Fowler and F. V. Chisari. Bone marrow-derived dendritic cells can break tolerance in hepatitis B virus transgenic mice. 5th International Workshop on Tolerance and Immune Regulation, La Jolla, CA, September 11-15, 1997.

187. Bertoni, R., L.G. Guidotti, P. Fowler, A. Sette, M. Shapiro, R. Purcell, F.V. Chisari. The HBV specific CTL response in infected humans and chimpanzees. Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

188. Cavanaugh, V.J., L.G. Guidotti, L.V. Tsui, F.V. Chisari. Inhibition of hepatitis B virus during adenovirus and cytomegalovirus infections in HBV transgenic mice. Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

189. Hobbs, M.V., L. Feng, V.J. Cavanaugh, F.V. Chisari, L.G. Guidotti. Analysis of intrahepatic chemokine gene expression during liver disease in HBV transgenic mice. Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

190. Heise, T., L.G. Guidotti, V. Cavanaugh, F.V. Chisari. HBV RNA-binding proteins induced during cytokine mediated clearance of HBV RNA from the liver. Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

191. Schultz, U., P. Staeheli, J. Summers, F.V. Chisari. Duck interferon blocks the accumulation of DHBV replicative intermediates in primary duck hepatocytes. Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

192. Shimizu, Y., L.G. Guidotti, P. Fowler, F.V. Chisari. Bone marrow-derived dendritic cells can induce HBV envelope-specific cytotoxic T lymphocytes in HBV transgenic mice.

Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

193. Ishikawa, T., S. Kakumu, D. Kono, A. Theofilopoulos, J. Chung, P. Fowler, F.V., Chisari. Polyclonal T cell receptor usage and multispecificity of the CTL responds to a single HBV epitope. Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

194. Nakamoto, Y., L.G. Guidotti, C. Kuhlen, P. Fowler, F.V. Chisari. Immunological basis of hepatocellular carcinoma in hepatitis B virus transgenic mice. Molecular Biology of Hepatitis B Viruses, Institut Pasteur, Paris, France, September 21-25, 1997.

195. Chang, K.M., B. Rehermann, J.G. McHutchison, C. Pasquinelli, S. Southwood, A. Sette, F.V. Chisari. Immunological significance of cytotoxic T lymphocyte epitope variants in chronic hepatitis C virus infection. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 7-11, 1997.

196. Ishikawa, T., S. Kakumu, D. Kono, A. Theofilopoulos, J. Chung, P. Fowler, F.V., Chisari. Polyclonal T cell receptor usage and multispecificity of the CTL responds to a single HBV epitope. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 7-11, 1997.

197. Nakamoto, Y., L.G. Guidotti, V. Pasquetto, S. Kaneko, K. Kobayashi, F.V. Chisari. Differential hepatocyte sensitivity to cytotoxic T lymphocyte-activated death pathways *in vivo*. Amer. Assoc. for the Study of Liver Diseases (AASLD) Chicago, IL, Nov. 7-11, 1997.

198. Cavanaugh, V.J., L.G. Guidotti, L.V. Tsui, F.V. Chisari. Inhibition of hepatitis B virus during adenovirus and cytomegalovirus infections in HBV transgenic mice. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

199. Chang, K.M., B. Rehermann, C. Pasquinelli, F.V. Chisari Cytotoxic T lymphocyte escape variants in chronic hepatitis C virus infection. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

200. Kakimi, K., J. Chung, C. Pasquinelli, F.V. Chisari. Differential recognition of the HCV core and core-E1-E2 proteins by core specific cytotoxic T lymphocytes. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

201. Nakamoto, Y., L.G. Guidotti, C. Kuhlen, P. Fowler, F.V. Chisari. Immunological basis of hepatocellular carcinoma in hepatitis B virus transgenic mice. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

202. Shimizu, Y., L.G. Guidotti, P. Fowler, F.V. Chisari. Bone marrow-derived dendritic cells can induce HBV envelope-specific cytotoxic T lymphocytes in HBV transgenic mice. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

203. Heise, T., L.G. Guidotti, V. Cavanaugh, F.V. Chisari. HBV RNA-binding proteins induced during cytokine mediated clearance of HBV RNA from the liver. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

204. Schultz, U., P. Staeheli, J. Summers, F.V. Chisari. Duck interferon blocks the accumulation of DHBV replicative intermediates in primary duck hepatocytes. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

205. Morrey, J.D., R.W. Sidwell, B.E. Korba, L.G. Guidotti, F.V. Chisari. HBV transgenic mice as a chemotherapeutic model for HBV infection. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

206. Guidotti, L.G., R. Rochford, M. Shapiro, R. Purcell, F. V. Chisari. Analysis of intrahepatic cytokine and T cell markers gene expression during acute HBV infection in chimpanzees. US-Japan Joint Panel on Hepatitis Annual Meeting 1998, Asilomar Conference Center, Monterey, CA, January 28-29, 1998.

207. Chisari, F.V., V. Cavanaugh, A. Franco, T. Heise, U. Schultz, L.G. Guidotti. Cytokine purging of hepatitis B virus infection. Keystone Symposia on Molecular and Cellular Biology, Keystone, CO, February 16-22, 1998.

208. Chang, K-M., M. Yanagi, J. Bukh, M. Shapiro, R.H. Purcell, F.V. Chisari. Proliferative T cell response to HCV during the early phase of infection in chimpanzees transfected with transcripts of full-length HCV cDNA. 5th International Meeting on Hepatitis C Virus and Related Viruses, Venice, Italy, June 25-28, 1998.

209. Chang, K-M., N. Gruner, S. Southwood, G. Pape, F.V. Chisari, A. Sette. Identification of HLA-A3 and –B7 restricted HCV CTL epitopes in patients with acute and chronic hepatitis C. 5th International Meeting on Hepatitis C Virus and Related Viruses, Venice, Italy, June 25-28, 1998.

210. Kakimi, K., J. Chung, F.V. Chisari. Differential recognition of the HCV core and core-E1 proteins by core specific cytotoxic T lymphocytes. 5th International Meeting on Hepatitis C Virus and Related Viruses, Venice, Italy, June 25-28, 1998.

211. Chang, K.M., X. He, M. Davis, H. Greenberg, F.V. Chisari. Quantitative analysis of the HBVspecific CTL response. . The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

212. Guidotti, L.G., R. Rochford, J. Chung, R. Purcell, F.V. Chisari. Viral clearance precedes the onset of hepatitis during HBV infection in chimpanzees. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

213. Heise, T., V. Cavanaugh, L.G. Guidotti, F.V. Chisari. Cleavage of HBV RNA by a nuclear ribonuclease that is upregulated during viral hepatitis in HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

214. Heise, T., L.G. Guidotti, F.V. Chisari. Cytokine regulated HBV RNA-binding proteins specifically recognize a predicted stem-loop. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

215. Kakimi, K., G. Lauvau, G. Niedermann, P. Fowler, J. Pemberton, P.M. van Endert, F.V. Chisari. Transport and presentation of HBV-derived peptides to HLA class I-restricted cytotoxic T lymphocytes. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

216. Kuhlen, C., R. Koch, L.G. Guidotti, F.V. Chisari. The large envelope protein is procarcinogenic in HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

217. Pasquetto, V., F.V. Chisari. Activated macrophage products regulate HBV replication in primary hepatocyte cultures from HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

218. Pasquetto, V., S.F. Wieland, V. Juillard, F.V. Chisari. HBV nucleocapsids survive cytotoxic T lymphocyte induced apoptosis of transgenic mouse hepatocytes. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

219. Schultz, U., J. Summers, F.V. Chisari. Characterization of the duck interferon system and its implication in DHBV infection. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

220. Wieland, S.F., L.G. Guidotti, F.V. Chisari. Cytokine mediated inhibition of HBV replication occurs post-translationally in transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting, University of California, San Diego, CA, August 30-September 3, 1998.

221. McKinney, D., Bertoni, R., Sidney, J., Chisari, F.V., Sette, A. Human class I supertypes extend to chimpanzees: studies with HBV, HCV and HIV derived epitopes. HIV Vaccine Development: Opportunities and Challenges, Keystone, CO, January 7-13, 1999.

222. Chisari, F.V. Immune pathogenesis of hepatocellular carcinoma. Hepatic Inflammation and Immunity, Galveston Island, TX, January 15-17, 1999.

223. Heise, T., L.G. Guidotti, F.V. Chisari. The cytokine regulated HBV RNA-binding protein La specifically recognize a predicted stem-loop. Jahrestagung der Gesellschaft für Virologie, March 9-12, 1999, Bremen, Germany.

224. Heise, T., V. Cavanaugh, L.G. Guidotti, F.V. Chisari. Upregulation and characterization of liver nuclear ribonucleases capable to cleave hepatitis B virus RNA endonucleolytically close to the binding site of the La protein. Jahrestagung der Gesellschaft für Virologie, March 9-12, 1999, Bremen, Germany.

225. Chisari, F.V., Pasquetto, V., Cavanaugh, V., Wieland, S.F., Heise, T., Guidotti, L.G. Inhibition of hepatitis B virus replication by inflammatory cytokines. Liver Development, Gene Regulation and Disease, Orvieto, Italy, June 2-6, 1999.

226. Wieland, S., Guidotti, L.G., Chisari, F.V. Cytokine mediated inhibition of hepatitis B virus replication occurs post-translationally in transgenic mice. Liver Development, Gene Regulation and Disease, Orvieto, Italy, June 2-6, 1999.

227. Chang, K.M., Thimme, R., Kakimi, K., Melpolder, J., Pemberton, J., Moorhead, J., McHutchison, J.G., Houghton, M., Alter, H.J., Chisari, F.V. The T cell response to HCV in chronically infected patients and after clearance of HCV infection. The 6th International Symposium on Hepatitis C and Related Viruses, National Institutes of Health, Bethesda, MD, June 6-9, 1999.

228. Chang, K.M., Oldach, D., Thimme, R., Chisari, F.V. HCV-specific T cell response in persons with high risk percutaneous exposure to HCV contaminated needles. The 6th International Symposium on Hepatitis C and Related Viruses, National Institutes of Health, Bethesda, MD, June 6-9, 1999.

229. Thimme, R., Bukh, J., Chang, K.M., Pemberton, J., Moorhead, J., McKinney, D., Sette, A., Shapiro, M., Houghton, M., Purcell, R.H., Chisari, F.V. T cell response to HCV in acutely infected chimpanzees. The 6th International Symposium on Hepatitis C and Related Viruses, National Institutes of Health, Bethesda, MD, June 6-9, 1999.

230. Guidotti, L.G., McClary, H., Whitten, C., Moorhead, J., Chisari, F.V. Nitric oxide mediates the antiviral activity of HBV specific CTL in HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting 1999, University of California Santa Cruz, Santa Cruz, CA, July 18-22, 1999.

231. Heise, T., Guidotti, L.G., Chisari, F.V, Will, H. Recombinant La interferes with the cleavage of HBV RNA by a nuclear endoribonuclease. The Molecular Biology of Hepatitis B Viruses Annual Meeting 1999, University of California Santa Cruz, Santa Cruz, CA, July 18-22, 1999.

232. Kakimi, K., Chung, J., Guidotti, L.G., Chisari, F.V. Hierarchy of the $CD8^+$ CTL response to HBV. The Molecular Biology of Hepatitis B Viruses Annual Meeting 1999, University of California Santa Cruz, Santa Cruz, CA, July 18-22, 1999.

233. Pasquetto, V., Guidotti, L.G., Chisari, F.V. Inhibition of HBV replication during murine malaria infection in HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting 1999, University of California Santa Cruz, Santa Cruz, CA, July 18-22, 1999.

234. Schultz, U., Summers, U., Chisari, F.V., Nassal, M. The core protein is involved in the IFN-α-mediated reduction of DHBV transcripts. The Molecular Biology of Hepatitis B Viruses Annual Meeting 1999, University of California Santa Cruz, Santa Cruz, CA, July 18-22, 1999.

235. Thimme, R., Chang, K.M., Pemberton, J., Chisari, F.V. CTL response to an HLA B51-restricted epitope in the HBV nucleocapsid protein during acute viral hepatitis. The Molecular Biology of Hepatitis B Viruses Annual Meeting 1999, University of California Santa Cruz, Santa Cruz, CA, July 18-22, 1999.

236. Wieland, S.F., Guidotti, L.G., Chisari, F.V. Inflammatory cytokines eliminate pregenomic viral RNA-containing capsids in HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting 1999, University of California Santa Cruz, Santa Cruz, CA, July 18-22, 1999.

237. Rosen, H.R., McHutchison, J.G., Chisari, F.V., Lentz, J.J., Rose, S.L., Taylor, K., Chou, S. Relationship between genetic polymorphisms of tumor necrosis factor locus and response to therapy in patients with chronic hepatitis C. Annual Meeting of the American Association for the Study of Liver Diseases, Dallas, TX, November 5-9, 1999.

238. Bukh, J., Thimme, R., Forns, X., Chang, K.M., Yanagi, M., Emerson, S.U., Chisari, F.V., Purcell, R.H. Acute resolving monoclonal hepatitis C virus (HCV) infection in a chimpanzee modifies subsequent infections with the homologous monoclonal virus. Annual Meeting of the American Association for the Study of Liver Diseases, Dallas, TX, November 5-9, 1999.

239. Bukh, J., Forns, X, Thimme, R., Emerson, S.U., Chisari, F.V., Purcell, R.H. Hepatitis C Virus (HCV) lacking the hypervariable region 1 (HVR1) of E2 is infectious but attenuated *in vivo*. 10^{th} International Symposium on Viral Hepatitis and Liver Disease. Atlanta, GA, April 9-13, 2000.

240. Bukh, J., Thimme, R., Forns, X., Chang, K.M., Yanagi, M., Emerson, S.U., Chisari, F.V., Purcell, R.H. A chimpanzee with sterilizing immunity against an hepatitis C virus (HCV) homologous challenge (Genotype 1a) was not protected against a heterologous challenge (Genotype 1b). 10^{th} International Symposium on Viral Hepatitis and Liver Disease. Atlanta, GA, April 9-13, 2000.

241. Thimme, R., Bukh, J., Pemberton, J., Guidotti, L.G., Purcell, R.H., Chisari, F.V. Antiviral T cell responses and intrahepatic cytokine profiles in HBV- and HCV-infected chimpanzees. 10th International Symposium on Viral Hepatitis and Liver Disease. Atlanta, GA, April 9-13, 2000.

242. Oldach, D., Almiroudis, D., Heyward, S., Primrose, J., McCarter, R., Chang, K., Thimme, R., Chisari, F.V., Thomas, D. Symptomatic acute hepatitis C virus infection following occupational needlestick exposures: virologic and immunologic correlates. 10th International Symposium on Viral Hepatitis and Liver Disease. Atlanta, GA, April 9-13, 2000.

243. Chisari, F.V. Hepatitis B Virus Pathogenesis. Falk Symposium 117, Hepatology 2000, Munich, Germany, May 4-6, 2000.

244. Wieland, S., Guidotti, L.G., Vega, R., Wodicka, L., Lockhart, D., Müller, R., Hilbush, B., Hasel, C., Chisari, F.V. Liver gene expression profiles induced by HBV and inflammatory cytokines in HBV transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting, Institut Pasteur, Paris, France, September 17-21, 2000.

245. Kakimi, K., Guidotti, L.G., Chisari, F.V. Activated NK1.1 positive cells inhibit hepatitis B virus replication in vivo. The Molecular Biology of Hepatitis B Viruses Annual Meeting, Institut Pasteur, Paris, France, September 17-21, 2000.

246. Thimme, R., Pemberton, J., Guidotti, L.G., Purcell, R.H., Chisari, F.V. Analysis of a successful immune response against HBV. The Molecular Biology of Hepatitis B Viruses Annual Meeting, Institut Pasteur, Paris, France, September 17-21, 2000.

247. Raney, A.K., Eggers, C., Kline, E.M., Guidotti, L.G., Chisari, F.V., Pontoglio, M., Yaniv, M., McLachlan, A. Cycling of viral replication intermediates into the nucleus in HNF1-null hepatitis B virus transgenic mice. The Molecular Biology of Hepatitis B Viruses Annual Meeting, Institut Pasteur, Paris, France, September 17-21, 2000.

248. Guidotti, L.G., Wieland, S., Chisari, F.V. Inflammatory cytokine control hepatitis B virus infection. Novartis/TSRI Joint Scientific Meeting, Monterey, CA, September 25-28, 2000.

249. Chisari, F.V. Immunopathogenesis of hepatitis B. Postgraduate Course Syllabus for 51st AASLD Annual Meeting, Dallas, TX, October 27-31, 2000.

250. Thimme, R., Pemberton, J., Guidotti, L.G., Purcell, R.H., Chisari, F. V. Analysis of a successful immune response against HBV. 51st AASLD Annual Meeting, Dallas, TX, October 27-31, 2000.

251. Thimme, R., Bukh, J., Pemberton, J., Guidotti, L.G., Sette, A., Purcell, R.H., Chisari, F.V. Clearance of HCV infection is determined by the vigor of the antiviral T cell response and the intrahepatic cytokine profile. 51st AASLD Annual Meeting, Dallas, TX, October 27-31, 2000.

252. Bukh, J., Thimme, R., Fox, X., Chang, K-M., Yanagi, M., Emerson, S.U., Chisari, F.V., Purcell, R.H. A chimpanzee with sterilizing immunity against a hepatitis C virus (HCV) homologous polyclonal challenge was not protected against a heterologous challenge. 51st AASLD Annual Meeting, Dallas, TX, October 27-31, 2000.